Complete.
V
1
10292
Smith.
18

BIOLOGIA
CENTRALI-AMERICANA.

INSECTA.

RHYNCHOTA.

HEMIPTERA-HOMOPTERA.

VOL. II.

PART 1.

BY

THE REV. W. W. FOWLER, D.Sc., M.A., F.L.S.

PART 2.

BY

PROF. T. D. A. COCKERELL.

1894–1909.

SMITHSONIAN
349528
LIBRARY

q QH
11
B615
v.49
RB
81

CONTENTS.

Part 1.

		Page
Introduction		v
List of Plates		vii
Errata et Corrigenda		xii
Membracidæ.	By W. W. Fowler	1, 318
Cercopidæ.		174, 322
Tettigoniidæ.		207
Gyponidæ.		293
Index		323
Plates.		

Part 2.

Aleurodidæ.	By T. D. A. Cockerell	1
Coccidæ.		2
Index		35

INTRODUCTION.

PART 1 of this Volume contains Canon Fowler's enumeration of four families of Homoptera—the Membracidæ, Cercopidæ, Tettigoniidæ, and Gyponidæ. The material of the Jassidæ was entrusted several years ago to a well-known Homopterist, who volunteered to prepare an account of them for this work. Unfortunately, nothing has been finished by him, nor have the specimens been returned to us, in spite of repeated applications to that effect. We are therefore compelled to close Volume II. as it stands, the concluding portion of Canon Fowler's contribution having been received in 1903. Twenty-five species of Membracidæ and four of Cercopidæ have since been added by other authors to the Central-American fauna, the Membracidæ mainly by the late G. B. Buckton, either in his 'Monograph' (1903) or in a paper published in the 'Transactions of the Linnean Society' [Zoology, (2) ix. pp. 329–338, pls. 21 & 22 (1905)], and a list of them is appended on pp. 318–322, with some notes by Canon Fowler. For the four families, exclusive of those mentioned in the Supplement, 659 species are enumerated, of which 385 are treated as new, with 42 new genera. Of the twenty-one coloured Plates issued in Volume II., which were all drawn and printed by Mr. E. Wilson, of Cambridge, ten are devoted to the extraordinary insects belonging to the family Membracidæ.

Part 2 of this Volume includes the enumeration of the families Aleurodidæ and Coccidæ by Professor T. D. A. Cockerell. This section of the subject is separately paged and indexed, and it is illustrated by figures in the text.

ED.

April 1909.

LIST OF PLATES.

	Plate.	Fig.	Page.
MEMBRACIDÆ.			
Membracis foliata, var. c-album	I.	1	5
—— albolimbata	I.	2	5
—— lefebvrei	I.	3	5
—— mexicana	I.	4, 5	5
—— humilis	I.	6	6
Enchophyllum melaleucum	I.	7	7
—— albidum	I.	8	7
—— dubium	I.	9	8
Enchenopa binotata	I.	10	9
—— minans	I.	11	9
—— ignidorsum	I.	12	10
—— sericea	I.	13	10
—— rugosa	I.	14	10
—— gladius	I.	15	11
—— quadricolor	I.	16, 17	11
—— (Campylenchia) nutans	I.	18	12
Tropidoscyta sallæi	I.	19	13
—— uniformis	I.	20	14
Leioscyta pallidipennis	I.	21	14
—— cornutula	I.	22	14
—— nitida	I.	23	14
Tylopelta gibbera	II.	1	15
Bolbonota insignis	II.	2, 3	17
—— cuneata	II.	4	17
—— inconspicua	II.	5	18
—— corrugata	II.	6	19
—— inæqualis	II.	7	20
Bolbonotodes ganglbaueri	II.	8	20
Philya minor	II.	9	22
—— dubia	II.	10	22
Scalmophorus reticulatus	II.	11	23
Pterygia bituberculata	II.	13	24
—— cerviceps	II.	12	24
Hypsoprora trituberculata	II.	15	25
—— nigerrima	II.	14	25
—— anatina	II.	16	26
—— coronata	II.	17	26
Sphongophorus ballista	II.	18, 19, 20	27
—— (Lecythifera) championi	III.	1	28
—— (——) affinis	III.	2	29
Sphongophorus (Lecythifera) robustulus	III.	3	29
—— (——) inflatus	III.	5	30
—— (Cladonota) latifrons	III.	6, 7	30
—— (Lobocladisca) biclavatus	III.	4	31
—— (——) guerini	III.	8	31
Triquetra grossa	III.	10	32
—— veruta	III.	9	33
—— apicalis	III.	11	33
Umbonia reclinata	III.	12	34
—— ataliba	III.	14	35
—— orozimbo	III.	15–20	36
—— orizabæ	III.	21, 22	37
—— gladius	III.	13	38
Hoplophora signoreti	III.	23	39
—— cinerea	III.	24	39
—— disparipes	III.	25	40
—— concinna	IV.	1	41
Platycotis tuberculata	IV.	2, 3	42
—— discreta	IV.	4	42
—— histrionica	IV.	5	43
Ochropepla corrosa	IV.	6	44
—— inæqualis	IV.	8	44
—— dubia	IV.	7	45
—— fuscata	X.	23	173
Potnia brevicornis	IV.	9	46
Orthoplophora salvini	IV.	10	47
Aconophoroides gladiator	IV.	11	48
Aspona turgescens	IV.	12	50
—— intermedia	IV.	13	51
—— cuneata	IV.	14	51
Darnis latior	IV.	16	52
—— partita	IV.	15	52
Hebeticoides acutus	IV.	17	53
—— confusus	IV.	18	54
Stictopelta bipunctata	IV.	19	55
—— varians	V.	1	56
—— punctata	V.	2	57
—— lineifrons	V.	3	58
—— nigrifrons	V.	4	58
—— indeterminata	V.	5	59
—— acutula	V.	6	60
Tropidarnis tectigera	V.	7	60

	Plate.	Fig.	Page.
Aconophora mexicana	V.	8	62
—— caliginosa	V.	9	62
—— nigricornis	V.	10	64
—— pinguis	V.	11	64
—— nitida	V.	12	66
—— variipennis	V.	13	67
—— ensata	V.	14	68
—— prunitia	V.	15	68
—— ferruginea	V.	16	69
—— disparicornis	V.	17	69
—— fusiformis	V.	18, 19	69
—— sinanjensis	V.	20, 21	70
—— femoralis	V.	22	70
—— pallescens	V.	23	71
Alcmeone godmani	V.	24	72
Hyphinoë marginalis *	V.	25	75
—— tau	VI.	1	76
—— ——, var. atitlana	VI.	2	76
—— cornuta	VI.	3	76
—— purulensis	VI.	4, 5	77
—— vulpecula	VI.	6	77
—— bigutta	VI.	7	78
—— ochracea	VI.	8	78
Ictaranthe latifrons	VI.	9	79
Tomogonia vittatipennis	VI.	10	79
Cymbomorpha prasina	VI.	11	80
Nassunia bispina	VI.	12	80
Dysyncritus intectus	VI.	13	81
Darnoides affinis	VI.	14	82
Scaphula melanocephala	VI.	15	83
Heteronotus trinodosus	VI.	16, 17	84
Tragopa insignis	VI.	18	85
—— bugabensis	VI.	19	85
Horiola arcuata	VI.	20	86
Parmula distinguenda	VI.	21	91
Amastris obtegens	VI.	22	92
Hypamastris segmentata	VI.	23	93
—— albifrons	VI.	24	93
Aphetea inconspicua	VI.	25, 26	95
Clepsydrius constrictus	VII.	1	95
Cyphonia clavata	VII.	2	96
Poppea setosa	VII.	3	97
—— torva	VII.	4	98
—— subrugosa	VII.	5	99
—— capricornis	VII.	6	99
—— concinna	VII.	7	100
—— affinis	VII.	8	100
—— munda	VII.	9	101
Parantonaë dipteroides	VII.	10	102
Ceresa nigricornis	VII.	11	104
—— nigrovittata	VII.	12	104
—— uncicornis	VII.	13	104
—— vacca	VII.	14	106
Ceresa concinna	VII.	15	106
Centrogonia elegans	VII.	16	107
Stictocephala fusca	VII.	17	109
—— elongata	VII.	18	110
Phacusa flavo-marginata	VII.	19	111
—— major	VII.	20	111
—— lineola	VII.	21	112
Euritea personata	VII.	22	113
—— munda	VII.	23	113
Acutalis nigrinervis	VII.	24	114
Trachytalis isabellina	VII.	25	115
Micrutalis malleifera	VIII.	1	118
—— viridicollis	VIII.	2	118
—— notatipennis	VIII.	3	119
Polyglypta costata, var. nigridorsis	VIII.	4	123
—— dorsalis, var.	VIII.	5	124
—— dispar	VIII.	6, 7	126
—— aguæ	VIII.	8	126
Bilimekia styliformis	VIII.	9	127
Polyglyptodes cucullatus	VIII.	10	128
—— scaphiformis	VIII.	11	129
Entylia sinuata, var. mira	VIII.	12	130, 321
Metheisa lucillodes	VIII.	13	132
Adippe zebrina	VIII.	14	133
—— hæretica (maculata)	VIII.	15	134, 321
—— pardalina	VIII.	16	134
—— histrio	VIII.	17	135
—— concinna	VIII.	18	135
—— inconspicua	VIII.	19	135
—— inæqualis	VIII.	20	136
Antianthe expansa	VIII.	21	137
Godingia guerreroensis	VIII.	22, 23	139
Cyrtolobus cristifer	VIII.	24	140
—— discoidalis	VIII.	25	141
—— virescens	IX.	1	141
—— inæqualis	IX.	2	142
Ophiderma mus	IX.	3	143
Telamona excelsa	IX.	4	144
—— mexicana	IX.	5	144
—— cristata	IX.	6	144
—— sinuata	IX.	7	144
—— albidorsata	IX.	8	145
—— satyrus	IX.	9	145
Platycentrus acuticornis	IX.	10	148
—— obtusicornis	IX.	11	149
Campylocentrus obscuripennis	IX.	12	150
—— brevicornis	IX.	13	151
—— brunneus	IX.	14	151
Gnamptocentrus cavipennis	IX.	15	153
Spathocentrus intermedius	IX.	16	153
Sphærocentrus curvidens	IX.	17	154
Brachybelus cruralis	IX.	18	155
Ischnocentrus niger	IX.	19	155, 320

* *H. marginata* on the Plate.

	Plate.	Fig.	Page.
Ophicentrus notandus	IX.	20	156
Psilocentrus xautipæ	IX.	21	157
Centriculus rufotestaceus	IX.	22	157
Amblycentrus pubescens	IX.	23	158
Phaulocentrus pileatus	X.	1	159
—— proximus	X.	2	160
—— sordidus	X.	3	160
—— cornutus	X.	4	160
Glischrocentrus cucullatus	X.	5	161
Centruchoides laticornis	X.	6	162
Smerdalea horrescens	X.	7	163
Stylocentrus championi	X.	8	164
Lycoderes phasianus	X.	9	164
—— serraticornis	X.	10	165
Gerridius scutellatus	X.	11	166
Tolania opponens	X.	12, 13	166
—— obtusa	X.	14	166
Gargaropsis innervis *	X.	15	167
Endoiastus caviceps	X.	16	168
Tropidaspis affinis	X.	17	169
Æthalion reticulatum	X.	18	171
—— ——, var. vitticolle	X.	19	171
—— nervoso-punctatum	X.	20	172
—— ——, var. minor	X.	21	172
—— quadratum	X.	22	172
Cercopidæ.			
Tomaspis inca	XI.	1, 2	176
—— semimaculata	XI.	3	176
—— insignita	XI.	4	177
—— 14-notata	XI.	5	177, 206
—— stygia	XI.	6	177
—— mylabroides	XI.	7	178
—— præminiata	XI.	8	179
—— limbata	XI.	9	179
—— discontinua	XI.	10	179
—— vilior	XI.	11	180
—— miles	XI.	12	182
—— handlirschi	XI.	13	182
—— jugata	XI.	14	183
—— rubra	XI.	15, 16	183
—— laterinotata	XI.	22	184
—— postica	XI.	18	184
—— lepidior	XI.	19	185
—— simulans	XI.	20	185
—— prænitida	XI.	23	186
—— apicifasciata	XI.	24	186
—— distincta	XI.	17	186
—— plagiata	XI.	21	187
—— imperans	XI.	25	188
—— ——, var. sexnotata	XI.	26	188
—— assimilis	XI.	27, 28	188
Tomaspis lineata	XI.	29	189
—— ——, var. similis	XI.	30	189
—— nuptialis	XI.	31	189
—— conspicua	XIV.	23	206
Neænus varius	XII.	1, 2	191
Cephisus siccifolius	XII.	3	192
[Lepyronia subfasciata]	XII.	4	192
Philænus fusco-varius	XII.	5, 6	193
Aphrophora lævior	XII.	7	194
—— grisea	XII.	8	194
Paraphrophora simplex	XII.	9	195
Xenaphrophora montana	XII.	10	196
Microsargane vittata	XII.	11	196
Epicranion championi	XII.	12	197
Eicissus decipiens	XII.	13	198
Clastoptera funesta	XII.	14, 15	199
—— globosa	XII.	16	200
—— compta	XII.	17	200
—— minima	XII.	18	201
—— antica	XII.	19	201
—— semivitrea	XII.	20	201
—— flavivitta	XII.	21	202
—— dimidiata	XII.	22	202
—— obtusa	XII.	23, 24	202
—— lænata	XII.	25	203
—— ståli	XII.	26	204
—— chiriquensis	XII.	27	204
—— flavifrons	XII.	28	205
—— unicolor	XII.	29	205
—— irrorata	XII.	30	206
Tettigoniidæ.			
Diestostemma rugicolle	XIII.	1	208
Amblydisca salvini	XIII.	2	209
—— rubriventris	XIII.	3	209
—— bugabensis	XIII.	4	210
—— postfumata	XIII.	5	210
—— fluctuosa	XIII.	6	211
—— tapes	XIII.	7	211
—— aulæata	XIII.	8	212
—— gigas	XIII.	9	212
Catorthorrhinus resimus	XIII.	10	213
Bascarrhinus platypoides	XIII.	11	214
Aulacizes mutans	XIII.	12	215
—— piperata	XIII.	13	215
—— figurata	XIII.	14	216
—— invidenda	XIII.	15	216
—— albidipennis	XIII.	16	217
—— sparsa	XIII.	17	218
—— pollinosa	XIII.	18	218
—— aurantiaca	XIII.	19	218
—— thunbergi	XIII.	20	219
—— panamensis	XIII.	21	219
—— insignior	XIII.	22	220

* This genus probably belongs to the Jassidæ (*cf.* p. 322).

	Plate.	Fig.	Page.
Phera vitripennis	XIV.	1	221
—— insolita	XIV.	2	222
—— atrata	XIV.	3	222
—— luciola	XIV.	4	223
—— centrolineata	XIV.	5	223
—— obtusifrons	XIV.	6	223
—— aterrima	XIV.	7	224
—— lacerta	XIV.	8	225
—— aurea	XIV.	9	225
Pherodes flammeicolor	XIV.	10	226
Cyrtodisca major	XIV.	11	226
Oncometopia interjecta	XIV.	12	228
—— dispar	XIV.	13, 14	229
—— tartarea	XIV.	15	229
—— fuscipennis	XIV.	16	230
—— quadrinotata	XIV.	17	230
—— miniatipennis	XIV.	18	231
—— undata	XIV.	19, 20	231
—— munda	XIV.	21	232
—— alpha	XIV.	22	232
—— rubescens	XIV.	24	233
—— speculifera	XIV.	25	233
—— anceps	XIV.	26	234
Tettigonia ruficeps, var. trilineata	XV.	1	236
—— resolubilis	XV.	2	236
—— septemfasciata	XV.	3	236
—— cynthia	XV.	4	236
—— chiriquensis	XV.	5	237
—— instrata	XV.	6	237
—— larvata	XV.	7	238
—— pardalina	XV.	8	238
—— coctilis	XV.	9	238
—— lignea	XV.	10	239
—— quinquesignata	XV.	11	239
—— mosaica	XV.	12	239
—— melancholica	XV.	13	240
—— lineosa	XV.	14	240
—— corixoides	XV.	15	240
—— conspissata	XV.	16	241
—— multilineata	XV.	17	241
—— lateralis	XV.	18	241
—— punctulata	XV.	19	242
—— germana	XV.	20	242
—— præterita	XV.	21	243
—— monticola	XV.	22	244
—— mediolineata	XV.	23	244
—— magica	XV.	24, 25	245
—— consobrina	XV.	26	245
—— granulata	XV.	27	245
—— stâli	XV.	28	246
—— ——, var. fractinota	XV.	29	246
—— pumicata	XVI.	1	246
—— guerreroensis	XVI.	2	246
—— appropinquans	XVI.	3	247
Tettigonia transfuga	XVI.	4	247
—— ignobilis	XVI.	5	248
—— superflua	XVI.	6	248
—— lugubris	XVI.	7	249
—— separanda	XVI.	8	249
—— semirasa	XVI.	9	249
—— aphrophoroides	XVI.	10	250
—— cervina	XVI.	11	250
—— albidonotata	XVI.	12	250
—— testudinaria	XVI.	13	251
—— redundans	XVI.	14	251
—— velutina	XVI.	15	251
—— congruens	XVI.	16	252
—— amulæ	XVI.	17	252
—— sirena	XVI.	18	253
—— albomaculata	XVI.	19	253
—— præstantior	XVI.	20	254
—— 11-maculata	XVI.	21	254
—— feralis	XVI.	22	254
—— fractilinea	XVI.	23	255
—— notanda	XVI.	24	255
—— erumpens	XVI.	25	256
—— spectralis	XVI.	26	256
—— bilineata	XVI.	27	257
—— tæniata	XVI.	28	257
—— distinguenda	XVI.	29	257
—— ostrina	XVI.	30	257
—— rufofasciata	XVII.	1	258
—— detracta	XVII.	2	258
—— scutellata	XVII.	3	258
—— trivirgata	XVII.	4	259
—— purpurascens	XVII.	5	259
—— costaricensis	XVII.	6	259
—— rubricollis	XVII.	7	260
—— pulchella	XVII.	8	260
—— ——, var. proxima	XVII.	9	260
—— flavoguttata	XVII.	10	260
—— areolata	XVII.	11	261
—— collata	XVII.	12	261
—— laudata	XVII.	13	261
—— sexguttata	XVII.	14	261
—— sociata	XVII.	15	262
—— jucunda	XVII.	16	262
—— sanguinolenta	XVII.	17	262
—— guttata	XVII.	18	263
—— coccinea	XVII.	19	263
—— bilimeki	XVII.	20	263
—— vulnerata	XVII.	21	264
—— recta	XVII.	22	264
—— æqua	XVII.	23	265
—— albiceps	XVII.	24	265
—— venusta	XVII.	25	266
—— multicolor	XVII.	26	266
—— atropunctata	XVII.	27	266
—— lutea	XVIII.	1	267
—— reservata	XVIII.	2	267
—— lucasi	XVIII.	3	268

	Plate.	Fig.	Page.
Tettigonia completa	XVIII.	4	268
—— delicata	XVIII.	5	269
—— fuscodorsata	XVIII.	6	269
—— verecunda	XVIII.	7	269
—— induta	XVIII.	8	270
—— clepsydra	XVIII.	9	270
—— flavivitta	XVIII.	10	271
—— compta	XVIII.	11	271
—— tunicata	XVIII.	12	271
—— sororia	XVIII.	13	272
—— civilis	XVIII.	14	272
—— mollipes	XVIII.	15	273
—— notaticeps	XVIII.	16	273
—— diducta	XVIII.	17	274
—— prolixa	XVIII.	18	275
—— virgaticeps	XVIII.	19	275
—— quadrivittata	XVIII.	20	276
—— redacta	XVIII.	21	276
—— idonea	XVIII.	22	276
—— cæruleovittata, var. delineata	XVIII.	23	277
—— composita	XVIII.	24	277
—— urbana	XVIII.	25	278
—— obtusior	XVIII.	26	278
—— limbaticollis	XVIII.	27	279
—— anceps	XVIII.	28	279
—— occatoria	XVIII.	29	279
—— sexlineata	XVIII.	30	280
—— carissima	XIX.	1	280
—— anita	XIX.	2	281
—— lativittata	XIX.	3	281
—— salutaris	XIX.	4	281
—— infulata	XIX.	5	282
—— dorsisignata *	XIX.	6	282
—— rubescens *	XIX.	7	282
—— aurolineata	XIX.	8	283
—— lemniscata	XIX.	9	283
—— luculenta	XIX.	10	284
—— rufimargo	XIX.	11	284
—— ——, var. propior	XIX.	12	284
—— pectoralis	XIX.	13	285
—— miniaticeps	XIX.	14	285
—— spectanda	XIX.	15	285
—— rufoapicata	XIX.	16	286
—— orbata	XIX.	17	286
—— pileata	XIX.	18	287
—— concinnula †	XIX.	19	287
—— teres	XIX.	20	287
—— robustula	XIX.	21	288
—— satelles	XIX.	22	288
—— mollicula	XIX.	23	288
—— mollicella	XIX.	24	289
—— fuscolineella	XIX.	25	290
—— psittacella	XIX.	26	290
—— variegata	XIX.	27	291
—— nasuta	XIX.	28	291
—— angustula	XIX.	29	291
—— ——, var. immaculata	XIX.	30	292
GYPONIDÆ.			
Epiclines godmani	XX.	1	293
Gypona germari	XX.	2, 3	296
—— bimaculata	XX.	4	297
—— delicata	XX.	5	297
—— chiriquensis	XX.	6	298
—— pallidovirens	XX.	7	298
—— dubia	XX.	8	298
—— excelsa	XX.	9	299
—— lacteipennis	XX.	10, 11	299
—— signoreti	XX.	12	299
—— obscurior	XX.	13	300
—— puniceiventris	XX.	14	300
—— compta	XX.	15, 16	301
—— vilior	XX.	17	301
—— verticalis	XX.	18	302
—— marginifrons	XX.	19	302
—— vulnerata	XX.	20	303
—— postica	XX.	21	303
—— glauca	XXI.	1	303
—— notanda	XXI.	2	304
—— subtacta	XXI.	3	304
—— spreta	XXI.	4	304
—— atitlana	XXI.	5	305
—— alborорata	XXI.	6	306
—— jansoni	XXI.	7	306
—— marmorata	XXI.	8, 9	306
—— teapensis	XXI.	10	307
—— adusta	XXI.	11	308
—— scutellata	XXI.	12	308
—— abjecta	XXI.	13	309
—— proscripta	XXI.	14	309
—— hebes	XXI.	15	310
—— decorata	XXI.	16	311
—— vinula	XXI.	17	311
—— ——, var. ornata	XXI.	18	311
—— propior	XXI.	19	311
—— tergata	XXI.	20, 21	312
—— hieroglyphica	XXI.	22	312
—— bisignata	XXI.	23	313
—— reservanda	XXI.	24	313
—— præterita	XXI.	25	314
—— exornata	XXI.	26	315
—— wallengreni	XXI.	27	315
—— nana	XXI.	28	315
—— celata	XXI.	29	316
—— resima	XXI.	30	316

* These species belong to the Jassidæ, but their generic location is at present doubtful (*cf.* p. 322).

† *T. compta* on the Plate.

ERRATA ET CORRIGENDA.

Part 1.

Page	Line	
5	23	for *M. foliacea* read *M. foliata.*
21	8	for *Spongophorus* read *Sphongophorus.*
188	18	after var. **sexnotata** add n.
208	26	for *Tettigonia nigricollis* read *Tettigonia rugicollis.*
224	14	after **Phera aterrima** add sp. n.
300	40	for *G. schaumi* read *G. subtacta.*

ZOOLOGIA.

Class INSECTA.

Order RHYNCHOTA.

Suborder HEMIPTERA-HOMOPTERA (continued).

Fam. MEMBRACIDÆ*.

Membracides, Germar, Mag. der Ent. iv. p. 7 (1821).
Membracidæ, Curtis, Brit. Ent. xii. Gen. p. 14 (1840).
Jassida (ex parte), Stål, Hem. Afr. iv. p. 82 (1866).

The members of this family are chiefly distinguished by the great development of the pronotum, which in many cases completely covers the whole body and occasionally the tegmina as well, and in most of the genera is much enlarged and conceals the scutellum. In the Centrotinæ, however, the extension of the pronotum does not conceal the scutellum, which is left more or less exposed, and in some genera the posterior process is diminished to a mere elongated point, while in a few the posterior process is entirely wanting; these may, as a rule, be known by having the metopidium †, or front part of the pronotum, strongly and more or less perpendicularly declivous; in the genus *Æthalion*, however, there is no posterior process of the pronotum, nor is the metopidium strongly declivous, but the position of this genus is very doubtful.

Stål regards his "Membracida" as merely a subfamily of the Jassidæ, yet, in spite of this, he classes *Æthalion* and other doubtful genera among the Centrotidæ; in any case, however, the wisdom of this arrangement appears to be doubtful, for the Membracidæ, as a whole, form one of the most distinct and unmistakable groups of all insects.

* By W. W. Fowler.

† I have used this term throughout to express the declivous part of the pronotum reaching from the base of the head to the front of the dorsum.

The headquarters of the family appear to be in Central and Tropical South America; a considerable number, however, are found in the Southern and Central parts of the United States of North America.

In his "Synopsis of the Subfamilies and Genera of the Membracidæ of North America" (Trans. Amer. Ent. Soc. xix. pp. 253–260), Dr. Goding enumerates sixty-five genera, of which the great majority also occur in Central America; a certain proportion also occur in Africa, Tropical Asia, and Australia; Stål (Hem. Afr. iv. pp. 82 *et seq.*) enumerates eleven genera and twenty-five species from Africa, and twenty-three genera as from Africa, Asia, and Australia combined; only three genera and five species are recorded as European, two or three of which appear to be somewhat doubtful.

The Membracidæ contain some of the most extraordinary forms that are found among the Insecta. The characters of the genera, however, are sometimes obscure, as they lead very closely one into the other, and it is hard to draw the line anywhere, although the extremes (as e. g. *Membracis* and *Bolbonota*) appear to be quite unlike in every way until examined with the whole series; the venation of the tegmina affords good characters, but is not of equal importance in all the groups, and occasionally breaks down. It is probable that good characters may eventually be found in the male organs in certain genera; but, except in one or two cases, I have found them of very little practical value as yet, and this will be the case until more material for dissection is provided.

I am much indebted to Mons. Severin, Herr Handlirsch and Dr. Ganglbauer, and Dr. Aurivillius, for their kindness in sending me typical specimens for examination from the Brussels, Vienna, and Stockholm Museums respectively; and also to Dr. Goding for his kindness in comparing many genera and species with those in his extensive collections and for giving me his opinion regarding them.

The Membracidæ may be divided, for convenience' sake, into the subfamilies mentioned below; they might, perhaps, more correctly be divided into two subfamilies only, the Membracinæ and the Centrotinæ, but as the present state of our knowledge of the Homoptera generally is very incomplete, it does not much matter which arrangement we adopt. In the Centrotinæ certain genera have the posterior process of the thorax wanting, but in these the metopidium is more or less strongly declivous, except in the case of *Æthalion*: the position of this genus, however, is open to much doubt, but I have, with much hesitation, allowed it to remain with the Membracidæ; it must at any rate be granted that its affinities are in several points strongly towards the family, and that certain of its species have the metopidium much more declivous than others; it must always, however, be regarded as holding an exceptional position.

I. Scutellum wanting or obsolete, or entirely concealed by the pronotum.
  1. Tarsi of equal length, or with the posterior pair the longest.
    A. Tibiæ, at least the intermediate and anterior pairs, dilated, foliaceous. MEMBRACINÆ.
    B. Tibiæ simple, or very slightly dilated, never foliaceous.
      a. Third or intermediate apical area of corium elongate, never petiolate. DARNINÆ.
      b. Third or intermediate apical area of corium petiolate, with the adjacent areas touching one another before it.
        *a**. Tegmina externally broadly coriaceous and opaque, with the veins of the coriaceous portion scarcely distinguishable, and the free margins broad or very broad . . . . . TRAGOPINÆ.
        *b**. Tegmina with all the veins distinct, entirely membranous, or occasionally with coriaceous patches, or with the base externally coriaceous and punctured . . . . . SMILIINÆ.
  2. Posterior tarsi very short, much shorter than the anterior and intermediate pairs . . . . . HOPLOPHORINÆ.
II. Scutellum distinct and more or less uncovered, with the apex nearly always excavate or broadly sinuate, and furnished on each side with acute angles. CENTROTINÆ.

I have not adopted the arrangement of the subfamilies followed by Stål and some other authors, as it seems preferable to begin the group with the Membracinæ rather than with the Tragopinæ as they have done; as a matter of fact, the question is one of small importance at present, as the affinities of the groups are as yet but imperfectly understood.

Subfam. *MEMBRACINÆ.*

The following table will serve to distinguish roughly the genera belonging to this subfamily which are mentioned below, but these dichotomous tables are always more or less unsatisfactory, and the full description should always be referred to:—

I. Pronotum very strongly foliaceous, much elevated, rounded in front, and without anterior process . . . . . *Membracis*, Fabr.
II. Pronotum moderately or slightly foliaceous or strongly compresso-elevate, nearly always with a longer or shorter horn in front, and at all events obtusely angled, and not broadly rounded.
  1. Lateral carinæ of pronotum not or scarcely extended beyond humeral angles. . . . . *Enchophyllum*, Am. et Serv.
  2. Lateral carinæ of pronotum extended beyond humeral angles, and usually reaching the hinder lateral margins . . . . *Enchenopa*, Am. et Serv.
III. Pronotum not foliaceous or compresso-elevate.
  1. Head three-lobed; pronotum with clavate or fungiform processes, variable in form . . . . . *Sphongophorus*, Fairm.

2. Head not three-lobed.
   A. Form, if viewed from above, more or less elongate or oblong, sometimes obtriangular.
      a. Pronotum without anterior horn or prominence, at most projecting in an obtuse angle or very blunt point.
         *a**. Pronotum with strong and robust lateral horns above shoulders; ocelli placed on a line drawn through upper margins of eyes . . . . . *Pterygia*, Lap.
         *b**. Pronotum without lateral horns above shoulders.
            a†. Dorsal ridge even, if viewed from the side.
               a‡. Form obtriangular; tegmina with three discoidal areas . . . . . *Tropidoscyta*, Stål. p.12
               b‡. Form oblong; tegmina with two discoidal areas. *Leioscyta*, gen. nov. p.14
            b†. Dorsal ridge strongly and deeply notched, if viewed from the side . . . . . *Tylopelta*, gen. nov.
      b. Pronotum with anterior horn or prominence, the latter being sometimes very broad, blunt, and tuberculate, in which case one or two more large tubercles are present on dorsum.
         *a**. Anterior horn of pronotum long, dilated at apex, apex carinate, if viewed from above; dorsum even. *Philya*, Walk.
         *b**. Anterior horn of pronotum broader at base, much narrower and not dilated at apex; dorsum even; elytra strongly reticulate towards apex. . . . . *Scalmophorus*, gen. nov.
         *c**. Dorsum variable, even, with a long, broad, almost upright horn, or broadly trituberculate, or with an anterior horn dilated at apex and carinate on upper surface, in which case a large tubercle is present at the base of the horn . . . . . *Hypsoprora*, Stål.
   B. Form globular, very short and stout.
      a. Elytra with two discoidal areas; wings with four apical areas; size smaller . . . . . *Bolbonota*, Am. et Serv.
      b. Elytra with four discoidal areas; wings with five apical areas; size larger . . . . . *Bolbonotodes*, gen. nov.

MEMBRACIS.

Membracis, Fabricius, Mant. Ins. ii. p. 262 (1787); Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 533; Stål, Kongl. Sv. Vet.-Ak. Handl. (Hem. Fabr.), Band viii. 1, p. 38.

This genus originally contained a large number of species which have been referred to other genera; it is now very well-defined, containing only the large and conspicuous insects with the pronotum strongly raised and foliaceous, and more or less rounded, sometimes semicircular; they appear to be confined to Tropical America. The larvæ of the genus are very curious, being of much the same shape as the perfect insect, but formed of separate upright narrow plates of different heights.

1. **Membracis foliata.** (Tab. I. figg. 1, 1 *a*, var. *c-album* *.)

Cicada foliata, Linn. Syst. Nat. 12th edit. i. 2, p. 705 [1] (part.).

Membracis foliata, Fabr. Syst. Ent. p. 675. 2 [2] (nec Mant. Ins. ii. p. 262).

Membracis lunata, Fabr. Mant. Ins. ii. p. 262. 5 [3].

Membracis c-album, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 244 [4] (=*Membracis foliata*, var. *b*, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 39) [5].

Hab. Mexico (*Sallé*); Guatemala (*Sallé*).—South America [1], Colombia, Cayenne [3 4 5], Venezuela, Brazil.

Central-American specimens belong to the variety *c-album*; the typical form of the insect has not occurred, apparently, within our limits. A Guatemalan example is figured.

2. **Membracis albo-limbata,** sp. n. (Tab. I. figg. 2, 2 *a*.)

Tota nigra; pronoto magno, semicirculari, limbo modico albo supra caput usque ad summam altitudinem extenso, punctato, interstitiis evidenter alutaceis; tegminibus ad apicem et pedibus fuscis, illis ad basin punctatis.

Entirely black; pronotum large and much elevated, semicircular, with a clear white border extending from above the head, and occupying about a third of the circumference; the surface is distinctly punctured and rather strongly veined, with the spaces between the punctures plainly alutaceous; tegmina punctured towards the base; legs fuscous.

Long. 10½ millim.; alt. max. 9 millim.

Hab. Central America (*Stentz, in Mus. Vind. Cæs.*).

One female specimen. It may possibly prove to be an extreme variety of *M. foliacea*.

3. **Membracis lefebvrei.** (Tab. I. figg. 3, 3 *a*.)

Membracis lefebvrei, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 246 [1].

Hab. Mexico (*Mus. Vind. Cæs.*).—Guiana, Cayenne [1].

Fairmaire quotes [1] the species as from "Coll. Signoret," but the specimen above referred to as from Mexico has no name affixed to it. There is a single specimen without locality in the Royal Belgian Museum.

4. **Membracis mexicana.** (Tab. I. figg. 4, 4 *a*; 5, 5 *a*, var.)

Membracis mexicana, Guér. Icon. Règne Anim. iii. p. 364, t. 59. fig. 1 [1]; Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 248 [2].

Membracis stolida, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 248 [3].

Membracis sexmaculata, Walk. Ins. Saunders., Homopt. p. 59 [4].

---

* In the measurements of these insects, as shown on the Plates, the extreme length and greatest height are indicated; in cases, however, where the rostrum is very long (*e. g.* Tab. I. fig. 15) the measurements are taken from end to end and then from this line to the lowest part of the head.

Hab. North America, California [1].—Mexico [1 2 3] (*Bilimek, coll. Signoret*), Chilpancingo in Guerrero, Teapa in Tabasco (*H. H. Smith*); British Honduras, R. Sarstoon, Belize (*Blancaneaux*); Guatemala, San Joaquin and San Gerónimo in Vera Paz, Guatemala city, Dueñas, Mirandilla, San Isidro (*Champion*); Honduras [4]; Nicaragua, Greytown (*Janson*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia [2].

This species appears to be by far the most abundant of the genus in Central America. It is very variable in size and also in colour; the specimens from Chilpancingo are of a bright sulphur-yellow, whereas the majority are more or less orange, and small light yellow, almost greyish specimens occur; the black markings are also variable. The larger specimens attain a length of 9 or even 10 millim., whereas the smaller do not exceed 6 millim. In Signoret's collection the larger specimens, which we regard as *M. mexicana*, are placed under *M. stolida*, whereas the small light specimens are referred to *M. mexicana*; from the large series in our collection it is, however, evident that they belong to the same species. *M. sexmaculata* is only a small light variety of the type form; Walker's type is from Honduras, and exactly agrees with two specimens from Nicaragua in our collection. We figure a typical example from Chilpancingo, and one of the var. *sexmaculata* from Teapa.

5. **Membracis tectigera**, var. ?

Membracis tectigera, Oliv. Enc. Méth. vii. p. 668 (1792) [1]; Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 246 [2].
Membracis elevata, Fabr. Syst. Rhyng. p. 8 (1803) [3].
Stoll, Cig. fig. 71 [4].

Hab. Mexico, Puebla (*Bilimek, in Mus. Vind. Cæs.*).—Colombia; Venezuela; Guiana, Surinam [4]; Brazil [2 3].

There is a specimen in the Vienna Museum collection which appears to be a variety of this species, labelled "Mexico, Puebla (*Bilimek*)," and I have found another in the collection of the Royal Belgian Museum, among the series of *M. tectigera*, from Brazil; they may be representatives of a new species, but more specimens must be examined before it can be described. This variety appears to differ from the type form in being less elevated, with the pronotum straight or almost straight before the apex, and the anterior white border not continued so far upwards; in shape it somewhat resembles the preceding species.

6. **Membracis humilis**, sp. n. (Tab. I. figg. 6, 6 *a*.)

Nigra, minus elevata, sparsissime griseo-pubescens; pronoto humili, haud super frontem producto, ante apicem sinuato, maculis tribus læte albis, primâ supra caput latâ, secundâ ad medium dorsi modicâ, et tertiâ ante apicem, apice ipso nigro; tegminibus pedibusque nigris, illis longe ultra apicem pronoti extensis.

Rather a small species, with the pronotum not much elevated, black, with three white spots—one large and

broad, above the head, almost crescent-shaped if viewed from the side, a second in the centre of the back extending down each side to about half the depth of the pronotum, and slightly dilated for about two-thirds of its depth, and a third just before apex, which leaves the extreme tip of the pronotum black; there is rather a strong sinuation just before the apex; tegmina considerably longer than pronotum; legs black.

Long. cum tegm. 8 millim.; alt. max. 4 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*).

One specimen. This species appears to be allied to *M. intermedia*, Fairm., but differs considerably in the shape of the pronotum and other particulars.

ENCHOPHYLLUM.

Enchophyllum, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 534 (1843); Stål, Kongl. Sv. Vet.-Ak. Handl. (Hem. Fabr.), Band viii. 1, p. 41 (1869).

This genus contains a few representatives from North, Central, and South America, which are connected with *Membracis* through the large and conspicuous *Enchophyllum cruentatum*, the type species on which Amyot and Serville founded the genus. Stål has subdivided the genus into three subgenera—*Phyllotropis* (to which *E. cruentatum* must be referred, and which answers to Burmeister's Division III. of *Membracis*, called by him 'M. foliaceo-ensatæ'), *Enchophyllum*, and *Tropidocera*; the species here mentioned belong to the last-named subgenus.

1. **Enchophyllum melaleucum.** (Tab. I. figg. 7, 7 *a*, 7 *b*.)

Enchenopa melaleuca, Walk. Ins. Saunders., Homopt. p. 59[1].

Hab. MEXICO[1]; GUATEMALA, Sabo in Vera Paz, Cerro Zunil (*Champion*).—SOUTH AMERICA, Juiz de Fora.

A specimen from Cerro Zunil is figured.

2. **Enchophyllum albidum,** sp. n. (Tab. I. figg. 8, 8 *a*.)

E. melaleuco affine, sed cornu magis porrecto, leviter arcuato, et colore differt; capite nigro, ocellis albidis, conspicuis; pronoto albido, cornu, vittâ ante apicem, et apice ipso, fusco-nigris; tegminibus griseo-fulvis; pedibus nigro-fuscis, tarsis testaceis.

About the same size as the preceding species, from which it may at once be distinguished by its colour and by the slightly longer and distinctly curved horn of the pronotum, which is of a dirty whitish colour, with the horn, a band before the apex, and the apex itself black; there are also dark markings above the head, which is black; pronotum distinctly punctured, with the dorsal keel acute; keels at sides of horn not extending beyond its base; shoulders slightly prominent; tegmina of a uniform tawny grey colour, darker at the extreme base; legs dark, with the tarsi light.

Long. 8 millim., cum tegm. 10 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

One example.

3. **Enchophyllum dubium,** sp. n. (Tab. I. figg. 9, 9 *a*, 9 *b*.)

Nigrum vel brunneo-nigrum ; pronoto in cornu sat longum leviter recurvum, apice supra viso haud dilatato, producto, maculis flavis duabus dorsalibus magnis (anticâ majori) interdum confluentibus, carinis lateralibus postice vix indicatis vel totis deficientibus ; pedibus nigris, tarsis flavis.

Of a black or brownish-black colour, with two large yellow patches on the back of the prothorax, of which the front one is the largest ; occasionally they are confluent ; the anterior horn of the prothorax is rather long and slightly curved, not dilated at the apex, carinated at the sides, with the continuation of the carinæ on the hinder part of the prothorax absent or scarcely indicated ; legs black, tarsi yellow.

Long. 8–9 millim., cum tegm. 9–10 millim. ; lat. max. $2\frac{1}{2}$–3 millim.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*) ; PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

As will be seen from the description, this species is somewhat intermediate between *Enchophyllum* and *Enchenopa* ; small specimens appear to do duty in some collections for *E. lanceolata*. Dr. Goding has kindly compared a specimen of it for me with his American species and returned it as new, and near his *Enchophyllum rileyi* : it is somewhat variable in size and colour. *E. dubium* is also allied to *Enchenopa albidorsum*, but that species has a straighter pronotal horn and is differently coloured. An example from Chiriqui is figured.

4. **Enchophyllum trimaculatum.**

Membracis trimaculata, Stål, Stett. ent. Zeit. xxv. p. 68 (1864) [1].

Enchophyllum (*Tropidocera*) *trimaculatum*, Stål, Öfv. Vet.-Ak. Förh. 1869, p. 271 [2].

Hab. MEXICO [1].

I have not seen a specimen of this species, which appears to be unique in the collection of the Stockholm Museum ; it is described as " *M. fulicæ* similis, sed thoracis cornu vix ullo."

ENCHENOPA.

Enchenopa, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 535 (1843) ; Stål, Kongl. Sv. Vet.-Ak. Handl. (Hem. Fabr.), Band viii. 1, p. 42 (1869).

A considerable number of American species are contained in this genus, which is divided by Stål into three subgenera, *Enchenopa*, *Campylenchia*, and *Tritropidia*. The species belonging to *Enchenopa* proper are very closely allied to the subgenus *Tropidocera* of *Enchophyllum*, and it would perhaps be the best course to amalgamate the genera ; the chief difference lies in the cessation or continuation of the lateral carinæ of the pronotum behind the horn, but this character is sometimes obscure. It is hard, however, to define or separate the genera allied to *Membracis* with any accuracy, the transition being almost complete from the large foliaceous type species of *Membracis* through *Enchenopa*, *Tropidoscyta*, and *Erecthia* to the small seed-like species of *Bolbonota*, which at first sight would certainly be considered to have no relation whatever with the group.

1. Enchenopa lanceolata.

Membracis lanceolata, Fabr. Mant. Ins. ii. p. 263 [1]; Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 251 [2].

Enchenopa lanceolata, Walk. List of Homopt. Ins. ii. p. 481 [3].

Enchophyllum (*Tropidocera*) *lanceolatum,* Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 42 (1869) [4].

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA [2 4], Colombia [3], Cayenne [1 4], Brazil, Juiz de Fora.

I have had the greatest difficulty in identifying this species, for it appears to be mixed with others in most collections; I believe it, however, to be a small species closely allied to *E. binotata*, but with the apex of the pronotal horn not dilated at the tip, if viewed from above, as is the case with the latter species. Say (*teste* Fairmaire) appears to have regarded it as probably a variety of *E. binotata*, but it appears to be distinct; it is rightly determined by Signoret in the Vienna Museum collection. All the specimens I have seen come from the southern portion of Central America or from South America; the examples referred to it from more northern localities belong to *E. binotata*.

2. Enchenopa binotata. (Tab. I. figg. 10, 10 *a*, 10 *b*.)

Membracis binotata, Say, in Long's Second Exped. p. 301 (1824) [1]; Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 251 [2].

Enchenopa binotata, Walk. List of Homopt. Ins. ii. p. 481 [3].

Enchenopa bifusifera, Walk. List of Homopt. Ins., Suppl. p. 125 [4].

Hab. NORTH AMERICA [2], Quebec (*Mus. Belg.*), United States [1 3], New York [3].—MEXICO, Jalisco (*Schumann*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Chilpancingo in Guerrero, Atoyac in Vera Cruz (*H. H. Smith*), Vera Cruz (*Sallé* [4]); GUATEMALA, San Joaquin, San Juan, and San Gerónimo, all in Vera Paz (*Champion*); PANAMA, Caldera (*Champion*).

This insect appears to be widely distributed, from Quebec to the State of Panama, and to be one of the most abundant species of the genus; further south its place is gradually taken by *E. lanceolata*, from which it may be known by the dilatation of the apex of the prothoracic horn, which is usually oblong and curved and bears a miniature resemblance to a swan's neck and head. A specimen from San Gerónimo is figured.

3. Enchenopa minans. (Tab. I. figg. 11, 11 *a*.)

Membracis minans, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 252, t. 4. fig. 32 [1]; Stål, Stett. ent. Zeit. xxv. p. 67 (1864) (wrongly printed *micans*) [2].

Hab. MEXICO [1 2], Atoyac in Vera Cruz (*H. H. Smith*).

The type in Signoret's collection as well as two other specimens in the collection of

the Vienna Museum which are placed with it are so imperfect that it is almost impossible to identify them.

There is a single specimen in our collection, referred to above as from Atoyac, which agrees with Fairmaire's figure of the species (*l. c.* t. 4. fig. 32). I am inclined to think that *E. minans* is merely a smaller and darker form of *E. binotata*. The Atoyac example is figured.

4. **Enchenopa ignidorsum.** (Tab. I. figg. 12, 12 *a*.)

Enchenopa ignidorsum, Walk. List of Homopt. Ins., Suppl. p. 124 [1].
Membracis sellata, Stål, Stett. ent. Zeit. xxv. p. 67 (1864) [2].

Hab. Mexico [1 2]; Panama, Volcan de Chiriqui 2500 to 3000 feet (*Champion*).

There is a specimen in our collection, from Bugaba, Panama, which must apparently be referred to this species, but it has the pronotal horn a little longer and more curved, and the large yellow dorsal patch divided by a dark marking; at all events it appears too nearly allied to admit of a separate description. A specimen from Chiriqui is figured.

5. **Enchenopa sericea.** (Tab. I. fig. 13.)

Enchenopa sericea, Walk. List of Homopt. Ins. ii. p. 493 [1].

Hab. Mexico, Cuernavaca in Morelos, Xucumanatlan and Chilpancingo in Guerrero (*H. H. Smith*), Guanajuato (*Dugès, in Mus. Belg.*); Panama, Volcan de Chiriqui (*Champion*).—Venezuela [1].

An example from Chiriqui is figured.

6. **Enchenopa rugosa,** sp. n. (Tab. I. figg. 14, 14 *a*.)

Nigra; pronoto dense sat fortiter punctato, in cornu leviter curvatum producto, carinis lateralibus fortiter elevatis, lateribus rugosis; tegminibus subhyalinis, fusco-brunneis; pedibus nigris, tarsis testaceis.

Black; head subquadrate, with the anterior edge almost truncate, slightly sinuate at the sides; pronotum black, rather strongly punctured, with the lateral keels strongly marked and uneven, and with the sides, especially near shoulders, strongly rugose; a fine raised line runs underneath from the head to the apex of the pronotal horn, which is stout and slightly curved, and has the carinæ at the sides very distinct; tegmina subhyaline, brownish, finely mottled, darker towards the base, punctured along the costa for about half their length; legs black, with the tarsi testaceous.

Long. 5 millim., cum tegm. 6 millim.

Hab. Mexico, Chilpancingo in Guerrero (*H. H. Smith*).

This species superficially resembles *E. monoceros*, but differs in colour, sculpture, and shape of pronotal horn; and also in the colour of the tegmina, which in *E. monoceros* are unicolorous dark ferruginous, with a clear hyaline patch at the apex.

7. **Enchenopa multicarinata,** sp. n.

Castaneo-ferruginea; capite modico subquadrato, pronoto subtiliter griseo-pubescenti in cornu longum et sat latum utrinque quinque-carinatum producto; tegminibus subhyalinis, venis brunneis; pedibus rufo-brunneis.

Elongate, castaneo-ferruginous, with the pronotum finely pubescent and closely punctured, produced into a horn which is longer than the remainder of the pronotum, and forms almost a straight line with it, and is broad, rounded at the tip, and furnished with five more or less distinct carinæ on each side; lateral carinæ strongly marked; tegmina brownish, darker towards the base, slightly mottled, coloured much as in the preceding species; legs ferruginous.

Long. $9\frac{1}{2}$ millim., cum tegm. $10\frac{1}{2}$; long. cornus 5 millim.

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).

This species resembles *E. sericea*, but may at once be distinguished by the much longer pronotal horn, which is furnished with more carinæ, by its finer pubescence and the colour of the tegmina.

8. **Enchenopa gladius.** (Tab. I. fig. 15.)

Membracis gladius, Fabr. Syst. Rhyng. p. 13[1].
Enchenopa gladius, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 42[2].

Hab. Panama, Bugaba 800 to 1500 feet (*Champion*).—South America [1] [2], Cayenne.

The single specimen contained in the 'Biologia' collection is much larger (long. 11 millim.) than a typical specimen sent me by Dr. Aurivillius, and is darker coloured; I cannot, however, find any structural difference sufficient to give it specific value. The slender form and very long thin thoracic horn at once distinguish the species from any other I have seen.

9. **Enchenopa quadricolor.** (Tab. I. figg. 16, 16 *a*; 17, var.)

Enchenopa quadricolor, Walk. Ins. Saunders., Homopt. p. 60[1].
Enchenopa subangulata, Walk. loc. cit. p. 61[2].
Enchenopa excelsior, Walk. loc. cit. p. 61[3].
Enchenopa humilior, Walk. loc. cit. p. 62[4].
Enchenopa curvicornis, Walk. loc. cit. p. 62[5].

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.; Mus. Holm.*), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*), Vera Cruz[5]; Guatemala, near the city (*Champion*).—South America [1], Venezuela [2] [3] [4].

This is a very puzzling species, and appears to present several different forms; the extreme varieties look very different, but in a large series they lead one into another by a perfect gradation. I thought at first that two species at least might be separated on the presence or absence of the pronotal horn, but in some specimens it is well marked, though short, in others it is rudimentary, and in others entirely absent: the colour, too, is variable; the upper surface of the pronotum is black or more or less ferruginous with two light markings, one dorsal and one just before the apex; at the

sides below these markings there is a space which is more or less broad and reddish or yellowish, the colour being in some specimens slightly marked, while in other cases it extends over a great part of the pronotum; the abdomen and legs are sometimes bright red and sometimes black or dark ferruginous.

I have, with some hesitation, assigned all the specimens before me to *E. quadricolor*; at first I was inclined to refer them to *E. curvicornis*, but Walker's type in the British Museum is immature and has the horn broken off, and it is almost impossible to identify it with any accuracy. We figure a typical *E. quadricolor* from Chilpancingo, and one of the var. with pronotal horn from Guatemala city.

10. **Enchenopa apicalis.**

Membracis apicalis, Stål, Stett. ent. Zeit. xxv. p. 68 (1864) [1].
Enchenopa apicalis, Stål, Öfv. Vet.-Ak. Förh. 1869, p. 273 [2].

Hab. Mexico [1] [2] (*coll. Signoret, in Mus. Vind. Cæs.*).

This is a small dark species, with the apex of the tegmina hyaline and the tarsi pale; superficially it resembles a *Tropidoscyta* rather than an *Enchenopa*, but Stål is probably right in including it in the latter genus.

11. **Enchenopa (Campylenchia) nutans.** (Tab. I. figg. 18, 18 *a* *.)

Membracis nutans, Germ. Mag. der Ent. iv. p. 28 [1]; Revue Silb. iii. p. 227 [2].
Enchenopa nutans, Stål, Öfv. Vet.-Ak. Förh. 1869, p. 271 [3].

Hab. Panama, Bugaba, Caldera, and David (*Champion*).—Brazil [1] [2].

This species is allied to *E. curvata*, which is regarded by Stål as synonymous with the following species of Walker (List of Homopt. Ins. ii. pp. 488–491)—*E. antonina*, *E. venosa*, *E. densa*, *E. frigida*, and *E. bimaculata*; the subgenus bears much the same relation to *Enchenopa* proper as *Argante* bears to *Aconophora*. *E. nutans* belongs to Stål's subgenus *Campylenchia* (Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 43). A specimen from Caldera is figured.

TROPIDOSCYTA.

Tropidoscyta, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 44 (1869).
Membracis, Germar, Rev. Silb. iii. pp. 228 etc. (ex parte).

This genus was formed by Stål to include *Membracis pœcila*, Germ., and other allied species; they are small inconspicuous insects: in several points they are closely akin

---

* It may be noticed that in some of the figures the antennal setæ are not represented; they are probably always present in the living insect, but are extremely easily rubbed or broken off, and are therefore absent in the majority of preserved specimens. It is possible that good characters may eventually be found in their position; in some of the larger species of *Membracis* they seem to be situated in distinct scrobes. (*Vide* Tab. I. figg. 1, 2.)

to *Enchenopa*; the prothorax, however, is not foliaceous, and is, as a rule, rather broad if viewed from above; the front part of the prothorax is either rounded or produced into a very obtuse point, and is never furnished with a projecting horn, and the back is strongly carinate. About a dozen species have hitherto been described from North, Central, and South America. It appears to be the best course to divide the genus further, and I have therefore assigned generic value to *Tropidoscyta gibbera*, Stål, and to *T. pallidipennis* and *T. cornutula*, Stål. In subdividing Stål's genera a difficulty is caused through his often omitting to state what his type is; this, and the omission of the references in his tables, and the fact that he appears often to have sent out species under MS. names, and not afterwards described them, tends much to lessen the value of some of his work, and to cause great confusion and unavoidable mistakes. There are certain species in Signoret's collection which I fail entirely to trace, although it is of course possible that descriptions may have been published somewhere, and the same is the case with two or three genera; as undoubtedly some are MS. names, it is probable that the others are also.

Membracis torva, Germ., may be taken as the typical species of *Tropidoscyta*, and *M. pœcila*, Germ., belongs to the same genus; the tegmina have three discoidal cells.

1. **Tropidoscyta sallæi**, sp. n. (Tab. I. figg. 19, 19 *a*.)

Fusco-ferruginea vel fusca, flavescenti-pubescens; pronoto fortius punctato, antice lato, postice angustato, apice mucronato, carinâ centrali et unâ vel duabus aliis utrinque multo elevatis, et ad latera supra oculos carinis quibusdam minoribus instructo; metopidio a latere viso fere recto; tegminibus fuscis parte apicali hyalinâ, venis conspicuis; pedibus fuscis.

Short, broad in front, much narrowed behind, fusco-ferruginous or ferruginous, with the apical portion of the tegmina abruptly hyaline and the apex mucronate. The central carina and one or two on each side are strongly marked, and over each eye there are several small carinæ; the metopidium, if viewed from the side, is almost straight, but projects a little further forward at its highest point in some specimens than in others; the surface of the pronotum is clothed with rather spare yellowish pubescence, and is moderately strongly punctured; the legs are fuscous.

Long. 5 millim.; lat. max. 3 millim.

Hab. MEXICO, Orizaba (*Bilimek, in Mus. Vind. Cæs.*); GUATEMALA, San Gerónimo (*Champion*); PANAMA, Bugaba, Caldera, Volcan de Chiriqui, and San Feliz (*Champion*).

This insect is identical with a specimen in the Vienna Museum collection named *Bolbonota sallæi*, of which I can find no published description. It appears to be somewhat variable in size and in the sculpture of the prothorax, the front part of which is more produced in some specimens than in others. An example from San Feliz is figured.

Since writing the above I have examined a specimen of *Membracis pœcila*, Germ., which is placed in the Vienna Museum collection under *Bolbonota*. It is closely allied to this genus, but differs in its much slighter pubescence and the almost total absence of carinæ above the dorsal ridge of the shoulders.

2. **Tropidoscyta uniformis,** sp. n. (Tab. I. figg. 20, 20 *a*, 20 *b*.)

Præcedenti affinis, sed brevior, pronoto multo fortius punctato, carinisque lateralibus supra oculos distinctius elevatis ; colore obscuriori, tegminibusque totis fuscis facillime distinguendus.

Very like the preceding, but smaller and shorter, black or almost black in colour, with the pronotum very coarsely punctured, and with the lateral carinæ above the eyes strongly marked ; the tegmina are entirely fuscous, with the apex not hyaline, though slightly lighter than the base ; the legs are fuscous.

Long. 4 millim. ; lat. max. $2\frac{1}{2}$ millim.

Hab. Panama, Boquete, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).

A specimen from Boquete is figured.

LEIOSCYTA, gen. nov.

Genus *Tropidoscytæ* affine, sed pronoto angustiori et longiori, carinisque lateralibus supra oculos deficientibus ; tegminibus areis duabus discoidalibus, venisque minus elevatis instructis.

Allied to *Tropidoscyta*, but with the pronotum narrower and more elongate in proportion, and more parallel-sided if viewed from above ; the upper surface, too, is smoother ; the small carinæ over the eyes are wanting ; the tegmina have only two discoidal areas, instead of three as in *Tropidoscyta*, and the veins are less raised and sometimes almost obsolete in the middle. The type of the genus is *Tropidoscyta pallidipennis*, Stål.

1. **Leioscyta pallidipennis.** (Tab. I. figg. 21, 21 *a*.)

Tropidoscyta pallidipennis, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 46 [1].

Hab. Mexico [1] (*Mus. Holm. ; Sallé*), Cuernavaca and Puebla (*Bilimek, in Mus. Vind. Cæs.*).

An example from the Stockholm Museum is figured.

2. **Leioscyta cornutula.** (Tab. I. figg. 22, 22 *a*.)

Tropidoscyta cornutula, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 46 [1].

Hab. Mexico [1] (*Mus. Holm. ; Sallé*).

The female only is known.

This species is closely allied to the preceding, but differs in having the front of the pronotum more porrect and extended into a very short blunt horn. It is quite possible that they may be sexes of one species ; but I have only been enabled to examine one specimen of each.

3. **Leioscyta nitida,** sp. n. (Tab. I. figg. 23, 23 *a*, 23 *b*.)

Nigra vel fusco-nigra, nitida ; pronoto fortiter punctato, carinâ centrali acute elevatâ plus minusve distincte albo-notatâ, et utrinque carinâ distinctâ sed minus elevatâ, instructo, lateribus supra oculos quoa dcarinas lævibus ; tegminibus nigris ad medium opacis, apice abrupte et læte hyalino ; pedibus nigris, genibus tarsisque dilutioribus vel totis fuscis.

A small, black, very shiny species, with the prothorax strongly and distinctly punctured, tricarinate, with the

central carina acutely raised and marked with white at the middle and before the apex; the sides above the eyes show no trace of carinæ; the tegmina are black, dull in the middle, strongly punctured towards the base, except on the central basal area, with the apical third or fourth part very abruptly and clearly hyaline, the line being drawn straight across at right angles to the apex of the prothorax; legs black, with the tarsi and knees lighter or entirely fuscous.

Long. 4 millim.; lat. int. hum. 2 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This is a very distinct little species, and differs considerably in appearance from the two preceding.

TYLOPELTA, gen. nov.

Genus *Tropidoscytæ* affine, sed pronoto maxime inæquali et gibbero areisque tegminum (discoidalibus tribus, apicalibus quinque) minus oblongis.

Allied to *Tropidoscyta*, but distinguished by the extremely uneven outline of the pronotum, which is level or almost level in the last-mentioned genus, but in the present genus is deeply and broadly excised in the middle and again before the apex; besides the central and two side carinæ there is only one short and broad carina above the eyes; the tegmina have the areas less oblong.

1. **Tylopelta gibbera.** (Tab. II. figg. 1, 1 *a*.)

Tropidoscyta gibbera, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 46[1].

Hab. NORTH AMERICA, Texas[1].—MEXICO, Orizaba (*H. H. Smith & F. D. G.*), Cuernavaca in Morelos, Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Chiacam and San Gerónimo in Vera Paz, Rio Naranjo, San Isidro, Panajachel, Calderas (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Through the kindness of Dr. Aurivillius I have been enabled to verify this insect by comparison with one of Stål's types of *Tropidoscyta gibbera*, which he records from Texas. There are specimens in the Vienna Museum collection labelled "*arcuata*, from Mexico," and one labelled "*arcuata* det. Signoret," without any indication of the genus, except that it appears by its position to be referred to *Bolbonota*; it is, however, nearer to *Tropidoscyta* than to the last-named genus, and certainly seems worthy of generic rank. We figure a specimen from Teapa.

BOLBONOTA.

Bolbonota, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 537 (1843); Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 257.

The members of this genus are small, dark, globose insects which, in a state of rest, fold their legs close against their body and look just like round black seeds. No insect could look more unlike the foliaceous species of *Membracis*, and yet, so gradual and so complete is the transition through intermediate species, that the older authors included them under the same genus. Four species of *Bolbonota* form Germar's division D,

"Gibbosæ," of the genus *Membracis* [v. Rev. Ent. Silb. iii. p. 229 (1835)], and he concludes his remarks regarding them with the following observation, which applies with equal force to many other of the genera and species of the Membracidæ:—"Species divisionis ultimæ ita ab illis primæ divisionis recedunt, ut proprii generis typos credas, sed in characteribus gravioris momenti conveniunt, et omnes quatuor divisiones formis intermediis inter se cohærent. Stethidii diversitates semper caute quæras, ne tot genera quot species exstant condas!"

Owing to the close resemblance that the species of *Bolbonota* bear to one another and the meagreness of the descriptions of many of the types, the difficulty of determining them rightly is very greatly increased, and very little is really known about the genus as a whole, which appears to contain a considerable number of species from Central and Tropical South America. They are, as a rule, very scantily represented in collections: in our collection there are large series of two or three species, which appear to vary considerably in size, colour of elytra, and (to a certain extent) in sculpture; and it is most probable that when the group is more worked and further material collected, several of the species already described will be found to be identical.

Dr. Goding (Canad. Ent. xxv. p. 55) separates the genus into two subgenera as follows:—

Posterior process of pronotum behind middle furnished with a high transverse tubercle or spine, more or less compressed antero-posteriorly; anterior part strongly and gradually elevated up to middle.	*Tubercunota,* Goding.
Posterior process from apex, seen from side, depressed; in front of depressed part dorsum straight or lightly bisinuate	*Bolbonota,* A. & S.

This distinction makes a good division in most cases, although certain species appear to be transitional; in examining the dorsal ridge the insect must be held perfectly upright and viewed exactly from the side.

Through the kindness of Herr Handlirsch I have been enabled to examine typical specimens of several of Signoret's species in the Vienna Museum (referred to by Fairmaire), which has been a great help towards determining the new species; but there are several of the species which have been described that I have not been able to see, and it is impossible to know what they are from the descriptions. A short monograph of the genus is much to be wished for, but no satisfactory one can be drawn up without an examination of all the types hitherto described and of larger series of the species than are at present available.

So far as I know, only one species has hitherto been recorded from any locality further north than Bogota. This is *B. aurosericea*, recently described by myself from a specimen in the Vienna Museum labelled "North America" (Trans. Ent. Soc. Lond. 1894, p. 417).

1. **Bolbonota insignis,** sp. n. (Tab. II. figg. 2, 2 *a*; 3, var.)

Major, lata, subparallela, nigra, nitida; capite antice fortius, postice levius punctato; pronoto fortiter remotius punctato, supra viso maxime inæquali, a latere viso dorso fere recto, ante apicem brevem et brevissime carinatum depresso; tegminibus colore variante, variegatis, nigricantibus, maculis quibusdam albidis vel flavo-testaceis, basi apiceque obscurioribus, margine exteriore apicali haud hyalino, plerumque nigro; pedibus nigris, tarsis testaceis vel fusco-testaceis.

A large, broad, black, and shining species. Head comparatively smooth, more strongly punctured in front than behind; pronotum strongly and remotely punctured, if viewed from above very uneven; the central carina is crossed by several minute transverse carinæ, and the carinæ of the front are much interrupted and irregular; if viewed from the side the dorsum, however, is almost straight until just before the apex, where it is abruptly declivous, the apex being very short and blunt; tegmina varying in colour, fuscous-black with a few white spots, or fusco-testaceous with the apex and base darker, or yellowish with the base reddish-brown and the apex fuscous; the apical margin, however, is without a distinct hyaline patch or mark; legs black, tarsi testaceous or piceo-testaceous.

Long. cum tegm. 5 millim.; lat. max. $3\frac{1}{2}$ millim.

Hab. MEXICO, Chinautla (*Flohr*), Atoyac in Vera Cruz (*H. H. Smith & Schumann*), Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Panzos in Vera Paz (*Champion*); COSTA RICA, Volcan de Irazu 6000 to 7000 feet, Caché (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui, David (*Champion*).

This species appears to be of about the same size as the *B. globosa* of Fairmaire, described from "Colombia." I have not seen an example of that species, which is referred to as being in "Coll. Spinola;" but the fact of the "carène médiane" of the prothorax being spoken of as "unie" seems to show that it is not the same as this species. In the case of some of his species, Fairmaire appears to have assigned rather too great a length to them. The specimens of *B. insignis* figured are rather extreme varieties, but intermediate forms connect them: fig. 2 is taken from an example with dark tegmina from Atoyac; fig. 3 from one with light tegmina from Teapa.

2. **Bolbonota cuneata,** sp. n. (Tab. II. figg. 4, 4 *a*, 4 *b*.)

Brevis, nigra, nitida, alte sculpta; præcedenti affinis, sed multo minor, pronoto cuneiformi, antice latissimo, postice fortiter angustato, dorso a latere viso antice leviter sinuato, fere recto, deinde mox ante apicem abrupte declivi; tegminibus plus minusve late ad medium albido-hyalinis, margine apicali unicolori, fumoso; pedibus fusco-nigricantibus, tarsis dilutioribus.

A short, broad, black, and shining species, coarsely and deeply sculptured; allied to the preceding, but easily distinguished by its much smaller size and the cuneiform shape of the pronotum, which is widest in front and strongly narrowed behind; dorsum, if viewed from the side, only slightly sinuate, comparatively straight, strongly depressed just before the apex; tegmina black, with the central part more or less hyaline, the dark and thick veins excepted; apical margin almost unicolorous, without distinct hyaline spot—this, however, is traceable and may be more distinct in other specimens; legs black or piceous, with the tarsi lighter.

Long. cum tegm. $3\frac{1}{2}$ millim.; lat. max. vix 3 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, San Isidro and El Reposo (*Champion*); COSTA RICA, Volcan de Irazu (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This is a species very distinct from any I have yet seen. We figure an example from Bugaba.

3. **Bolbonota pictipennis.**

Bolbonota pictipennis, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 258 [1].

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Atoyac in Vera Cruz (*Schumann*); Guatemala, Senahu and Panzos in Vera Paz, Rio Naranjo, El Tumbador, Las Mercedes, Cerro Zunil (*Champion*); Panama, Boquete 3500 feet, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—South America, Cayenne [1], Brazil [1].

This species, of which we have received a large series from Chiriqui, appears to be very variable in size and to a certain extent in sculpture and in the colour of the tegmina. The largest specimens are about $3\frac{1}{2}$ millim. in length; they are dull black, fuscous-black, or brownish insects, with the dorsum, if viewed from the side, almost straight until just before the apex, where it is abruptly depressed. The elytra are dark, with yellow or whitish spots, and with the apex distinctly hyaline; in one example from Panzos in Vera Paz the yellow colour covers the whole centre of the tegmina, and the dorsum is less abruptly depressed than is usual with the species.

On an examination of typical specimens from Signoret's collection I have little doubt but that *B. nisus*, Germ., and *B. pictipennis*, Fairm., are identical; if this is the case, the first name must be adopted. As, however, Signoret's specimens are somewhat broken and imperfect, I prefer to leave the species as they are for the present.

Walker's *Tetraplatys atomarius* (List of Homopt. Ins. ii. p. 510) is either this or a closely-allied species.

Var. **lævior.**

Minor, lævior, minus rugosa, apice pronoti evidenter magis prolongato.

Closely allied to the type form, but differs in being smaller and less rugose, with the apex of the pronotum evidently more prolonged.

Long. $2\frac{1}{2}$–3 millim.; lat. max. 2 millim.

Hab. Panama, Volcan de Chiriqui, Bugaba (*Champion*).

It is possible that this may be a distinct species, but in the large series of the type form and the variety from the Volcan de Chiriqui the gradations are so regular that it is very difficult to divide the variety from the type, although no one would hesitate in describing the extreme examples as distinct. The smallest examples are only about $2\frac{1}{2}$ millim. in length.

Besides the examples above referred to there are two specimens from San Juan in Vera Paz (*Champion*) which appear to belong to this variety, although they differ slightly in one or two particulars.

4. **Bolbonota inconspicua,** sp. n. (Tab. II. figg. 5, 5 *a*.)

Minima, brevis; capite pronotoque opacis, dense punctatis, hoc carinâ centrali supra viso integrâ, distinctâ, duabusque utrinque distinctis supra humeros; dorso a latere viso æquali vix sinuato, ante apicem obtusum

abrupte declivi; tegminibus piceis, maculis albidis parvis in medio notatis, margine apicali hyalino; pedibus nigris, tarsis testaceis vel piceo-testaceis.

A very small short species, rather dull, thickly but distinctly punctured, and sparingly but distinctly pubescent; pronotum with the central carina and two lateral carinæ between this and the shoulders regular and distinct; dorsum, if viewed from the side, nearly straight until just before the apex, where it is abruptly depressed; tegmina dark, with small whitish or yellowish spots, and with the apex distinctly hyaline on the margin; legs black or pitchy, with the tarsi brighter; occasionally the tegmina have no distinct small spots, but are light in the central portion.

Long. cum tegm. 2 millim.; lat. max. $1\frac{1}{2}$ millim.

Hab. MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, El Tumbador (*Champion*).

This species appears to be closely allied to the smaller specimens of the var. *lævior* of *B. pictipennis*, but has the prothorax shorter and broader in proportion, with a more blunt and shorter apex. An example from Teapa is figured.

5. **Bolbonota corrugata,** sp. n. (Tab. II. figg. 6, 6 *a*.)

Nigra vel fusca; quoad formam *B. insigni* affinis, sed multo minor; dorso magis distincte tuberculato, a latere viso multo magis inæquali, pone medium, iterumque ante apicem brevissimum abrupte declivi; tegminibus nigris aureo-sparsis, vel parte totâ mediâ, venis crassis exceptis, aureâ vel albidâ; pedibus nigris vel piceis, tarsis flavescentibus.

In general form very like *B. insignis*, but considerably smaller, with the sculpture of the pronotum, if viewed from above, proportionally stronger, and the dorsum, if viewed from the side, plainly tuberculate just before the middle, then strongly and sinuately depressed, and tuberculate and again depressed before the apex; tegmina varying—dark with yellow or whitish spots, or with the yellow or whitish colour prevailing in the centre, their apex usually with a small hyaline patch externally, which is sometimes indistinct.

Long. $3\frac{1}{2}$ millim.; lat. max. $2\frac{1}{2}$ millim.

Hab. PANAMA, Taboga I., San Miguel in the Pearl Is. (*Champion*).

A specimen from Taboga Island is figured.

Var. **minor.**

Minor, minus nitida, densius minutiusque punctata; tegminibus ut in formâ typicali maxime variantibus, interdum fere totis flavescentibus.

Very like the type form, with which it is identical in the sculpture of the dorsal ridge, but smaller, less shining, and more thickly and closely punctured; the tegmina are very variable in colour, being sometimes almost entirely yellow, and at others dark with yellow spots.

Long. cum tegm. 3 millim.; lat. max. 2 millim.

Hab. BRITISH HONDURAS (*Blancaneaux*); PANAMA, Bugaba, Volcan de Chiriqui, and Caldera (*Champion*).

I had described this insect as a new species, but on close examination I cannot detect any structural difference between it and the type form, although the punctuation and general sculpture are somewhat different. Two of the specimens from Bugaba are duller and more pubescent than the others.

6. **Bolbonota inæqualis.** (Tab. II. figg. 7, 7 *a*.)

Bolbonota inæqualis, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 259 [1].

Hab. Panama, Taboga I. (*Champion*).—Brazil [1].

The single specimen (♂) from Taboga I. in our collection is more strongly sculptured and more shining than any of those from Brazil in the Belgian Museum, which are the only ones I have seen, and it may belong to a separate species; it is, however, very closely allied to *B. inæqualis* in the general form, the shape of the dorsal ridge of the pronotum, and the peculiar colouring of the tegmina (which are entirely hyaline, with the exception of the base and the veins), and can hardly be described as distinct on a single specimen. It is also allied to *B. pusio* in the colour of the tegmina; but the latter insect differs from *B. inæqualis* in having the thorax rather longer and less broad proportionately in front, and the ridge of the dorsum not tuberculate.

B. corrugata and *B. inæqualis* belong to Dr. Goding's subgenus *Tubercunota*; all the others above noticed must be referred to *Bolbonota* proper.

BOLBONOTODES, gen. nov.

Genus *Bolbonotæ* affine; capite longo, antice rotundato, metopidio irregulariter rugose carinato, a latere viso fere recto, dorso supra viso maxime inæquali, sed carinâ dorsali a latere visâ fere rectâ ante apicem abrupte declivi, apice breviter mucronato; tegminibus areis apicalibus quinque, discoidalibus quatuor, alis areis apicalibus quinque, instructis; pedibus anticis intermediisque valde dilatatis.

Allied to *Bolbonota*, but larger, with the whole upper surface very uneven and rugosely carinate, especially in front; the tegmina have five apical and four discoidal areas and the wings have five apical areas—in *Bolbonota* the numbers are five, two, and four respectively; the dorsal ridge is straight and even if viewed from the side, but a little before the apex is abruptly and almost perpendicularly declivous, the apex itself being short and mucronate.

1. **Bolbonotodes ganglbaueri,** sp. n. (Tab. II. figg. 8, 8 *a*, 8 *b*.)

Brunneo-testacea, spatiis quibusdam depressis obscuris; pronoto maxime inæquali, sat fortiter remotius punctato; carinâ dorsali integrâ, utrinque carinâ semicirculari hanc tangenti, et etiam carinâ laterali instructâ, his antice ad carinam centralem conjunctis, apice acuto, fusco; præterea carinis quibusdam et depressionibus irregularibus; tegminibus variegatis, margine ad partem albido; pedibus abdomineque fuscis, tarsis dilutioribus.

Testaceous or brownish testaceous, with the depressions on the prothorax, which is very uneven and rugosely carinate, darker, of a brownish-black colour; the central carina is complete and, if viewed from above, forms a small point over the metopidium, which, if viewed from the side, is almost straight; on either side of the central carina is a semicircular carina with the circular parts opposed and meeting at the central carina, the ends joining two lateral carinæ which are continued and meet in front; between these carinæ are deep depressions; tegmina testaceous, variegated with whitish and blackish patches, and with the edge partly whitish hyaline; legs and abdomen fuscous, tarsi lighter.

Long. 6 millim.; lat. int. hum. 4 millim.

Hab. Mexico, Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

One female specimen. This is a very distinct and extraordinary insect, and is very hard to describe; the figure, however, will give a much better idea of it than can be obtained from a description.

PHILYA *.

Philya, Walker, List of Homopt. Ins., Suppl. p. 126 (1858).
Æchmophora, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. no. 1, p. 39 (1869).

This peculiar genus is described by Walker as being "*Enchenopæ* affinis;" in several points, however, it is more closely allied to *Spongophorus*, although it may certainly be regarded as affording a connecting link between the two genera. I believe that *Azinia*, Walker (Ins. Saunders., Homopt. p. 63), is very closely allied to or identical with this genus; the single specimen on which its only species, *A. pallidipennis*, is described is very like *Philya vitreipennis*, but it is very much broken and can hardly be identified. The locality is given as "China," but it is possible that some mistake may have been made on this point. Stål has completely overlooked Walker's genus.

1. **Philya lituus**, sp. n.

Elongata, angusta, unicolor, fusca vel fusco-ferruginea; pronoto in cornu prælongum ad apicem reflexum et dilatatum et utrinque carinatum prolongato, fortiter rugosius punctato, humeris vix prominulis; dorso acute carinato pone humeros angustato et ad apicem posteriorem subparallelo, apice ipso obtuso; tegminibus fuscis, fere totis intectis; tibiis dilatatis.

Elongate, narrow, of a uniform fuscous or ferruginous fuscous colour, with the pronotum very coarsely punctured, especially in front, and produced into a long thick horn (about as long as the rest of the body), which is curved upwards before the apex, and at the apex is dilated; the dilatation, if viewed from above, is bordered and furnished with a carina, which is continued down the metopidium; the dorsal carina is strong, and on either side of the horn is a carina which ceases before the shoulders and apex, and below this on each side a second carina, the latter pair meeting in front and forming the border of the dilated part of the apex of the horn; behind the shoulders, which are scarcely prominent, the pronotum is narrowed and is subparallel to its posterior apex, which is blunt; the greater part of the tegmina, which are of a uniform fuscous colour, is exposed, and a considerable portion is visible from above at the sides of the pronotum; legs fuscous, with the tibiæ moderately dilated.

Long. 11 millim.; lat. int. hum. 2 millim.

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).

Allied to *P. bicolor*, Walk., but differently coloured, with the punctuation coarser, the back of the pronotum more uneven, and the horn more curved before the apex.

2. **Philya vitreipennis**, sp. n.

Præcedenti affinis, sed multo minor et angustior, ferruginea, pronoto minus fortiter punctato, cornu magis ascendente, et processu postico longiori et tenuiori; tegminibus liberis, hyalinis, venis dilute testaceis; tibiis testaceis.

Much smaller and narrower than the preceding, with the prothorax ferruginous, less strongly punctured, and

---

* There is a genus of Pentatomidæ named *Philia* by Schiödte, which Stål has altered to *Philya*, Hem. Afr. i. p. 33; it has, however, nothing to do with the present genus.

with the posterior process longer and more slender; tegmina free, hyaline, with the veins light testaceous; legs testaceous, with the front and middle tibiæ strongly, and the hinder tibiæ slightly, dilated.

Long. 8 millim.; lat. int. hum. $1\frac{1}{4}$–$1\frac{1}{2}$ millim.

Hab. MEXICO, Paso del Macho (♂), Orizaba (♀) (*Bilimek, in Mus. Vind. Cæs.*).

The male has the posterior apical process of the prothorax much more elongate than in the female and differently shaped.

Among the unnamed species in the Belgian Museum collection there is a large series of a species from Botafogo and Rio Janeiro which is very closely allied to this insect; it is, however, rather larger and darker.

3. **Philya minor,** sp. n. (Tab. II. figg. 9, 9 *a*, 9 *b*.)

P. vitreipenni maxime affinis, sed minor, cornu tenuiori, multo magis porrecto et rectiori, lateribus parallelis, apice supra viso vix dilatato et tegminibus totis brunneis facile distinguenda.

Rather smaller than the preceding, from which it may easily be known by the much straighter and more slender pronotal horn, which is very slightly dilated at the apex; the colour is a uniform testaceous brown, with the horn a little darker towards the apex and the wings vitreous; the femora also are dark; the tegmina are strongly punctured towards the base.

Long. 6–7 millim.; lat. int. hum. 1–$1\frac{1}{4}$ millim.

Hab. GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

Four specimens, one of which is figured.

4. **Philya dubia,** sp. n. (Tab. II. figg. 10, 10 *a*, 10 *b*.)

Præcedenti affinis, sed cornu pronoti breviori, a latere viso antice sensim angustato, supra viso haud vel minime dilatato; sculptura leviori, tegminibusque totis hyalinis venis minus crassis, testaceis, facile distinguenda.

Of about the same size as the preceding, but easily distinguished by the form of the pronotal horn, which is shorter, broader at the base, and gradually narrowed to the apex, which, viewed from the side, is rounded off into a blunt point, and viewed from above is only just perceptibly dilated; the general sculpture is finer, and the tegmina are clear hyaline with fine testaceous veins; in the latter character (the vitreous tegmina) it is allied to *P. vitreipennis*, but is totally distinct from that species, which has the pronotal horn much broader and more curved and quite differently formed at apex; the colour of the prothorax is testaceous.

Long. 6 millim.; lat. int. hum. $1\frac{1}{4}$ millim.

Hab. MEXICO, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

One broken specimen in the Vienna Museum, labelled Mexico (*Bilimek*), appears also to belong to this species.

P. dubia is very closely allied to *Scalmophorus reticulatus*, but it presents a trace of the peculiar dilatation of the upper part of the apex of the horn of *Philya*, and the tegmina of the elytra are intermediate in form; the whole arrangement of this group is in a very uncertain state at present.

SCALMOPHORUS, gen. nov.

Elongatus, angustatus; capite magno, subquadrato; cornu pronoti robusto sat longo, a latere viso ad basin lato, antice angustato, apice vel a latere vel supra viso haud dilatato; prothorace sat fortiter punctato

carinato, dorso fere æquali; tegminibus reticulatis, areis apicalibus novem vel decem, discoidalibus decem, quindecim vel etiam septemdecim instructis; pedibus dilatatis.

Of a narrow diamond shape, if viewed from above, with the pronotum narrowed to a point before and behind, carinate and rather strongly punctured, with the anterior horn robust, broad at the base, and gradually narrowed to an obtuse point at the apex, with the apex straight or very slightly deflexed, or reflexed if viewed from the side, if viewed from above or at the side not dilated, but constricted on its anterior portion a little before the extreme point, the posterior process long, slender, impressed on either side, the dorsum almost level throughout; tegmina strongly reticulate, with nine or ten apical areas and ten to fifteen or seventeen discoidal areas; wings with four apical areas; tibiæ dilated.

Allied closely to the latter species of the preceding genus, but separated by the shape of the pronotal horn and the very strongly reticulate tegmina. Stål's *Æchmophora curvicornis* appears from his description to be in several points allied to this species, but he speaks of the pronotal horn as "*valde nutans*," and mentions nothing about the peculiar reticulation of the elytra.

1. **Scalmophorus reticulatus,** sp. n. (Tab. II. figg. 11, 11 *a*, 11 *b*.)

Brunneus vel testaceo-brunneus, unicolor, cornu pronoti ad latera subrugoso, carinâ dorsali testaceâ, brunneo variegatâ; tegminibus brunneo-hyalinis, basin versus punctatis; pedibus plerumque nigricantibus.

Of a unicolorous brown colour, with the head closely and finely punctured, and the pronotum strongly punctured and carinate, the keel extending beneath the horn; tegmina brownish-hyaline, punctured towards the base, except in the centre; legs mostly black or fuscous.

Long. $7\frac{1}{2}$ millim.; lat. int. hum. 2 millim.

Hab. GUATEMALA, San Gerónimo 3000 feet, Cerro Zunil 4000 feet (*Champion*).

The specimen from Cerro Zunil has the prothoracic horn more evenly pointed and the elytra more strongly reticulate; it may belong to a separate species, but this cannot be decided without further material. We figure the example from San Gerónimo.

PTERYGIA.

Pterygia, Laporte, Ann. Soc. Ent. Fr. i. 221 (1832); Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 263; Walker, List Homopt. Ins. ii. p. 499.

Notocera, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 536; Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 276.

This genus contains a considerable number of insects, which have been divided by Stål into four subgenera, *Notocera*, *Pterygia*, *Hypsoprora*, and *Æchmophora*; of these, *Pterygia* and *Notocera* can hardly be separated, and the type forms of *Æchmophora* must be referred to Walker's *Philya*, and appear entirely distinct from the form classed by Stål under *Notocera*. The species below included under *Pterygia* are rough, scabrous, tuberculate, or partly spinose insects, with a pair of strong horns or processes in front of varying length, and with the back furnished with two or three larger or smaller protuberances, which are blunt or rounded at the apex. All the known species belonging to the genus appear to have been hitherto described from tropical South America.

1. **Pterygia hispida.**

Pterygia hispida, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 265 [1].

Hab. GUATEMALA (*Mus. Vind. Cæs.*).—COLOMBIA [1].

There is a broken specimen of this species in the Vienna Museum, labelled as from Guatemala.

2. **Pterygia bituberculata,** sp. n. (Tab. II. figg. 13, 13 *a*.)

Brevior, fusco-nigra, vestitu albido dense induta, variegata; capite oblongo latitudine multo longiori; metopidio ad basin cornuum bituberculato, his brevibus, robustis, latis, truncatis, apicibus latis excavatis; pronoto fortiter remotius punctato, carinâ indistincte spinosâ a capite ad apicem percurrente, dorso protuberantiâ minore spinis crassis instructâ inter radices cornuum, aliâque majore pone medium, latâ, rotundatâ, parte apicali deinde a latere viso leviter rotundatâ, haud tuberculatâ; tegminibus opacis, fuscis, testaceo variegatis; pedibus nigricantibus, tarsis flavis.

A rather short and robust species, of a fuscous black colour, clothed more or less abundantly with a clear white serration, which is also present on the legs and tegmina, and is more or less fugitive; head long, metopidium set with scanty short spines and with a distinct tubercle on each side near the base of the horns; the latter are short and broad, truncate at the apex, with the apex excavate, subtriangular if viewed from above and pointed at the angles; a spinose carina runs from the apex of the metopidium to the apex of the pronotum, which is strongly, though more or less remotely, punctured, and is furnished on the dorsum with a somewhat irregular spinose tubercle between the base of the horns, and a larger one, rounded at the apex, a little behind the middle; from this point the apex is gently rounded; the tegmina are fuscous, broadly and more or less obscurely variegated with testaceous, and the legs are dark with the tarsi yellow; the whole surface is scabrous and sparingly set in certain parts with short stout spines.

Long. 5–5½ millim.; lat. int. corn. 3 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Juan and Chacoj in Vera Paz, El Reposo (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui, Caldera, David, San Lorenzo, Peña Blanca 3000 to 4000 feet (*Champion*).

This species is very closely allied to *P. hispida*, but the horns are more divaricate and broader at the apex, and the dorsum is bituberculate. The single specimen of *P. hispida* which I have seen has the hinder part of the pronotum wanting, but Fairmaire (*l. c.* p. 265) expressly says "prolongement postérieure portant trois élévations." An example from San Juan in Vera Paz is figured.

3. **Pterygia cerviceps,** sp. n. (Tab. II. figg. 12, 12 *a*.)

Præcedente major, fusca, plus minusve distincte albido-vestita; capite latitudine longiori; metopidio supra viso ante cornua extenso, breviter tuberculato; cornibus longis recurvis, apicibus latis excavatis; dorso spinoso, ad basin cornuum vix elevato, spinis crassis instructo, protuberantiâ rotundatâ mox pone medium, aliâque minore sed distinctâ mox ante apicem, apice ipso obtuso tegminum apicem attingente; his opacis, fuscis, brunneo variegatis; pedibus fuscis.

Larger than the preceding, black, fuscous, or testaceous, according to maturity, more or less distinctly clothed with a whitish secretion, but not so strongly as in the preceding species; head long, metopidium, if viewed from above, continued for some distance in front of the horns, which are very long, recurved, much dilated, truncate and excavate at the apex, the hinder angles being sharp; dorsum with three protuberances, the first of which is slight and marked by long thick spines, the second the highest, broad and rounded, and the third like the second but smaller and not so broad in proportion at the apex; a spinose carina runs

from the apex of the metopidium to the apex of the pronotum, and the upper surface is more or less spinose in parts, and strongly though remotely punctured; tegmina opaque, fuscous, variegated with brown or brownish testaceous; legs fuscous.

Long. 6 millim.; lat. $5\frac{3}{4}$ millim.

Hab. GUATEMALA, Teleman, Panima, and Panzos in Vera Paz (*Champion*); PANAMA, Bugaba and Caldera in Chiriqui (*Champion*).

Five specimens; one from Teleman is figured.

HYPSOPRORA.

Hypsoprora, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 277 (1869).
Æchmophora, Stål, loc. cit. p. 278 (ex parte).

The type-forms of Stål's subgenus *Æchmophora* (*Æ. elephas* and *Æ. recticornis*) must be referred to Walker's genus *Philya*; but *Æchmophora coronata*, Fabr. (=*Pterygia varia*, Walker), seems to be closely related to certain forms of *Hypsoprora*, and I have therefore placed it under that genus, together with the other species of *Pterygia* which have no horns at the side of the pronotum above the shoulders. In all these forms the pronotum is more or less extended in front into an erect process, which in some cases is broadly rounded and very obtuse, and in others very much elongated; this process is wanting in the species of *Pterygia* proper.

1. **Hypsoprora trituberculata.** (Tab. II. figg. 15, 15 *a*, 15 *b*.)

Pterygia (*Hypsoprora*) *trituberculata*, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 278[1].

Hab. MEXICO (*Sallé; Mus. Holm.*[1]); PANAMA, Bugaba (*Champion*).

The specimen from Bugaba may belong to a distinct species, as it is smaller, with the pronotum narrower, and differs somewhat in the relative size of the dorsal protuberances; without further material, however, it can hardly be regarded as separate. A Mexican example is figured.

2. **Hypsoprora nigerrima,** sp. n. (Tab. II. figg. 14, 14 *a*.)

Tota nigra; capite lævi, distincte punctato; metopidio tuberculato; pronoto scabro, fortiter punctato, rugoso, parte anticâ, intermediâ et posticâ plus minusve elevatâ, dorso sinuato, apice obtuso, protuberantiâ posticâ latâ latera pronoti excedente, postice dilatatâ; tegminibus nigris, opacis, ad basin punctatis; pedibus nigris, tibiis tarsisque interdum dilutioribus.

Of a deep black, moderately shining, with the metopidium and other portions of the pronotum more or less tuberculate; pronotum rugose and coarsely punctured, with the dorsum more or less strongly sinuate, and divided into three elevations, which appear o vary in size and elevation in different specimens, the hinder one being the broadest and least elevated, and, if viewed from above, dilated strongly behind; tegmina black, opaque, together with the apex of the prothorax occasionally indistinctly irrorated with minute yellowish or whitish spots; legs black, tarsi sometimes lighter.

Long. $3\frac{1}{2}$–4 millim.; lat. $1\frac{3}{4}$ millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*); GUATEMALA (*Mus. Brit.*), El Tumbador 2500 feet (*Champion*).

In the type-specimen the dorsal prominences are very little elevated: it is possible that the specimens from Atoyac, in which they are much more elevated, may belong to a different species; if viewed from above, however, they are almost identical, and they can hardly be separated until more material is discovered; the difference is not sexual. We figure a specimen from El Tumbador.

3. **Hypsoprora anatina,** sp. n. (Tab. II. figg. 16, 16 *a*.)

Fusco-ferruginea, plus minusve albido-vestita; pronoto scabro, dense sat fortiter punctato, antice in processum longum erectum, in medio externe rotundatim dilatato, deinde angustato, apice recurvo, extenso, carinâ centrali leviter spinosâ, protuberantiis dorsalibus nullis; tegminibus apicem prothoracis haud superantibus, ferrugineis, opacis, ad basin punctatis; pedibus rufis vel ferrugineis.

An elongate and rather slender species, fusco-ferruginous, more or less distinctly clothed with a fugitive whitish secretion; pronotum scabrous, thickly and distinctly punctured, produced in front into a long erect process, which is strongly sinuate externally and dilated in the middle, and then rounded and slightly recurved before the apex, presenting the appearance of the outline of a duck's head; in some cases, however, the sinuation appears to be not nearly so marked, and the sides are subparallel; the distance from the front edge of the metopidium to the apex of the process is about equal to the distance from the same to the apex of the tegmina; there are no dorsal protuberances; the tegmina are opaque and ferruginous, and the legs reddish.

Long. 6 millim.; lat. int. hum. $1\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

4. **Hypsoprora coronata.** (Tab. II. figg. 17, 17 *a*, 17 *b*.)

Membracis coronata, Fabr. Syst. Rhyng. p. 14[1].
Pterygia coronata, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 47[2].
Pterygia (*Æchmophora*) *coronata,* Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 279[3].
Pterygia varia, Walk. List of Homopt. Ins. p. 502[4].

Hab. GUATEMALA, Chiacam in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—SOUTH AMERICA [1 2], Colombia [4].

This species is of about the same size as the preceding; it has the apex of the short pronotal process shaped much as in *Philya*, but in other respects is more closely related to *Hypsoprora*; it may, perhaps, form the type of a separate genus. An example from the Volcan de Chiriqui is figured.

SPHONGOPHORUS.

Sphongophorus, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 261 (1846); Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 273 (1869).

This genus contains upwards of twenty species, which are all from Central or Tropical South America: the majority, apparently, inhabit Brazil. They are among the most extraordinary of the Membracidæ, and, in fact, there are few insects which assume more curious forms; in some cases, at all events, these forms are protective, for, when

at rest, many of the insects must resemble pieces of dry twigs. Stål divides the genus into three subgenera, which may be distinguished as follows *:—

Pronotum with a very long, slender, recurved anterior process, and a long, more or less curved, posterior process, the whole pronotum often forming about three fourths of a circle . . . . Subgen. *Sphongophorus*, i. sp.

Pronotum with the anterior process stout, very long, and recurved; posterior process furnished with an erect knob, beyond which the anterior process, which is usually simple underneath, considerably projects . . . . . Subgen. *Cladonota*, Stål.

Pronotum with the anterior process stout, shorter than in *Cladonota*, sometimes erect; posterior process armed at about or behind middle with an erect horn or knob, beyond which the anterior process, which is always furnished with a knob or large tooth, does not project . . . . . Subgen. *Lobocladisca*, Stål.

To these three a fourth is here added:—

Subgeneri *Lobocladiscæ* valde affinis, sed processu antico pronoti postice simplici, semper curvato et ad clavam processus intermedii extenso, hac interdum maxime inflatâ . . . . Subgen. *Lecythifera*, subg. nov.

The subgenus *Lecythifera* chiefly differs from *Lobocladisca* in having the posterior side of the anterior process simple, in which point it resembles *Cladonota*, from which it differs in the fact that the anterior process does not extend beyond the intermediate process. In the slender form of one or two of its species it is allied to *S. ballista*; one of them, *L. inflata*, has the club of the intermediate process enormously inflated, but it is in other points so closely allied to the other species that it can hardly be separated off as a distinct genus on this one point alone.

The Old-World genus *Hypsauchenia*, although it resembles *Sphongophorus* in some respects externally, is really very distinct, for the legs are not foliaceous and the tegmina are very differently veined.

1. **Sphongophorus ballista.** (Tab. II. figg. 18, 18 *a*, 18 *b*; 19, 19 *a*, 19 *b*; 20, 20 *a*, 20 *b*.)

Hypsauchenia ballista, Germ. Rev. Ent. Silb. iii. p. 231 [1].

Hypsauchenia ballista, Am. et Serv. Hist. Nat. des Ins. Hémipt. p. 535 [2].

Sphongophorus ballista, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 261 [3].

Sphongophorus claviger, Stål, Stett. ent. Zeit. 1864, p. 68 [4].

Sphongophorus apicalis, Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 273 (1869) [5].

---

* I have made very little use of subgenera in the Membracidæ: in the case of *Sphongophorus*, however, I have preferred to retain the division into subgenera, at all events for the present, as, in the first place, they lead too closely one into the other to be separated generically, and, in the second place, almost every other species might be described as a new genus.

Hab. MEXICO [3 4] (*Sallé*), Cuesta de Misantla and San Lorenzo near Cordova (*M. Trujillo*), Atoyac in Vera Cruz and Jalisco (*Schumann*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Juan and Purula in Vera Paz, El Tumbador, Cerro Zunil, San Isidro, Zapote (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui, Caldera, Tolé (*Champion*).—SOUTH AMERICA, Bogota [5], Demerara [1], Savannah [2].

The series of this species in our collection is almost certainly the largest that has ever been obtained, and consists of more than one hundred examples. There is a considerable amount of variation, especially in the formation of the apex of the anterior process, which, as a rule, appears to be more or less knobbed in the males and bifid in the females; this is not, however, a universal rule, for it is sometimes almost simple in both sexes, and in the case of two males before me from the same locality one is slightly bifid and the other has a very large knob. The posterior process also differs in being narrower or broader, and more or less porrect, especially in the males; in fact, a series of males from Bugaba, Panama, might almost be formed into a new species on this character, but the females appear to be quite normal.

S. claviger of Stål, of which there is a single male specimen (without abdomen) from Mexico in Signoret's collection, is a rather large and robust brownish variety of this species, of which there are several larger and more representative specimens in our series from San Gerónimo, Guatemala; if they stood alone they might be regarded as distinct, but intermediate forms render it plain that they can, at the most, be only counted a variety, and I feel no doubt but that Stål's *S. apicalis* must also be sunk as a synonym of *S. ballista*.

The anterior process in the female is often much longer than in the males, and is much waved if viewed from above; this never, or only in a very slight degree, appears to be the case with the males.

Mr. Champion captured two specimens *in cop.*; if the segments of the circles almost formed by the pronotum in each case were completed, they would in this position present nearly an exact figure of **8**.

We figure examples from Atoyac (fig. 18), Teapa (fig. 19), and San Gerónimo (fig. 20).

2. **Sphongophorus (Lecythifera) championi,** sp. n. (Tab. III. figg. 1, 1 *a*.)

S. ballistæ affinis; niger vel brunneo-niger; pronoto antice punctato, processu antico et postico reticulatis; processu antico teretiori plus minusve alte curvato, usque vel fere ad apicem processus dorsalis extenso, clavâ sat magnâ, supra visâ subtriangulari, instructo; processu postico apicem tegminum vix attingenti, ad finem in processum brevem, crassum, reflexum producto, pone medium processu erecto armato, hoc clavo lato, postice extenso, plus minusve malleiformi terminato; tegminibus punctatis, nigris, apicem versus fusco-brunneis, maculâ hyalinâ marginali sub basi processus intermedii sitâ; pedibus testaceis vel fusco-testaceis.

Black or brownish black, with the anterior process of the pronotum rather slender and curved behind until it is almost in a line with the apex of the tegmina, widened at its apex into a subtriangular club; the posterior prolongation extends nearly to the apex of the tegmina, ending in a short, thick, reflexed process,

set at right angles to the posterior process itself; between the middle of the latter and the short apical process there arises an intermediate somewhat hammer-shaped process, consisting of a thick club, with the head pointing backwards, and in some cases almost meeting the apical process; tegmina punctured, black, fuscous towards the apex, with a hyaline spot just under the stalk of the intermediate process; legs testaceous or fusco-testaceous. The metopidium and the sides of the front of the pronotum are punctured; the pronotal processes, however, are more or less coarsely reticulate.

Long. 6, lat. $1\frac{1}{2}$ millim.; alt. max. 6–8 millim.

Hab. GUATEMALA, El Reposo 800 feet, San Isidro 1600 feet (*Champion*).

Four specimens, apparently all males. This very distinct species is closely allied to *S. ballista*, and forms a connecting-link between that species and the stouter forms of the subgenera *Cladonota* and *Lobocladisca*. An example from El Reposo is figured.

3. **Sphongophorus (Lecythifera) affinis,** sp. n. (Tab. III. figg. 2, 2 *a*.)

Præcedenti affinis, sed processu pronoti anteriori multo breviori et ad apicem simplici, haud clavatâ; processu apicali clavâ subtriangulari, et processu intermedio clavâ paullo minore terminato; pedibus læte testaceis.

Very like the preceding, but rather larger, and easily distinguished by the anterior process of the pronotum being much shorter, much more abruptly curved, and simple at the apex, the apex being just on a level with the club of the intermediate process, which is rather smaller; the formation of the apex of the posterior process is different, being subtriangular; the tegmina are produced further beyond the apex of the pronotum, and the legs are of a bright testaceous colour.

Long. 7, lat. $1\frac{1}{2}$ millim.; alt. max. 5 millim.

Hab. GUATEMALA, Quiché Mountains 7000 to 9000 feet, Totonicapam 8500 to 10,500 feet (*Champion*).

Five specimens, apparently all males. Although this species resembles the preceding, yet it appears to be quite distinct. The specimens of these two species in our collection are all mounted on card, and I have not determined the sex in every case; but those which I have examined are males, so that the differences are not sexual. If, however, we take into consideration the varying forms in a large series of *S. ballista*, it is possible that the present species may eventually turn out to be a form of the preceding. An example from the Quiché Mountains is figured.

The specimens from Totonicapam are unfortunately all broken, but I have no doubt, from what is left of them, that they belong to this species.

4. **Sphongophorus (Lecythifera) robustulus,** sp. n. (Tab. III. figg. 3, 3 *a*.)

Parvus, brunneus, metopidio utrinque dilutiori, rugosus, processu antico pronoti robusto, curvato, apice, supra viso, plus minusve dilatato; processu postico tereti, apice triangulari, ad medium processu robusto, clavâ magnâ terminato, instructo; tegminibus brunneis; pedibus testaceis.

Mas. Apice processus antici latiori bilobo; clavâ processus intermedii, supra visâ, latâ, a latere visâ rotundatâ.

Femina. Apice processus antici vix dilatato; clavâ processus intermedii, supra visâ, angustâ, a latere visâ subrhomboideâ.

A small, robust, rugose species, brown, with the metopidium on each side lighter; anterior process of the pronotum stout, curved, ending in a club, which is broad and bilobed, if viewed from above, in the male, and scarcely at all dilated in the female; the posterior process is slender, and terminates some distance before

the apex of the tegmina in a small triangular process; from the middle arises a stout stalk, bearing a club, which is very large in proportion to the size of the insect—in the male this is thick and rounded, but in the female it is thinner, and subrhomboidal and pointed at the apex; the tegmina are brown, unicolorous and subhyaline in the male, somewhat mottled and more opaque in the female; the legs are testaceous or brownish testaceous.

Long. $4\frac{1}{2}$–5, cum tegm. $5\frac{1}{2}$–6 millim.; alt. max. 5–6 millim.

Hab. GUATEMALA (*Mus. Roy. Belg.*), Dueñas (*Champion*), Aceituno (*Salvin*).

This distinct little species is allied to *S. championi* and *S. affinis* on the one hand, and to the stouter brown species of the subgenus *Cladonota* on the other. A specimen from Dueñas is figured.

5. **Sphongophorus (Lecythifera) inflatus,** sp. n. (Tab. III. figg. 5, 5 *a–c.*)

Nigro-brunneus vel brunneus, processu antico pronoti robusto, curvato, clavâ oblongo-rotundatâ reticulatâ; processu postico vix ante apicem vel ad apicem processu rotundato, permagno, inflato, sessili, reticulato instructo; apice prothoracis plerumque brevissime pone hunc prominenti; tegminibus longis ultra apicem prothoracis extensis, brunneis, maculâ marginali testaceâ sub processu inflato sitâ; pedibus testaceis.

Of a blackish-brown or brownish colour, with the anterior process of the pronotum robust, curved, and terminated in an oval or almost oval club; posterior process furnished just at the apex with an enormous, round, inflated bulb-like process, which, like the club of the anterior process, is reticulate and finely sculptured in the interstices of the reticulations, and is sometimes marked with little spots of a lighter colour; this process has no stalk, but is sessile, and the apex of the pronotum usually projects very slightly beyond it; the tegmina are long and project beyond the apex of the pronotum, and are of a brown colour, with a large testaceous mark on the margins just below the inflated process; legs testaceous.

Long. 9, cum tegm. 10 millim; diam. process. 6 millim.; alt. max. 7–8 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

About a dozen specimens, male and female; the sexes do not appear to differ in any noticeable degree. The peculiar inflated process will at once distinguish this species from any other. In fig. 5 *c* part of the sculpture of the inflated process is represented.

6. **Sphongophorus (Cladonota) latifrons.** (Tab. III. figg. 6, 6 *a*, ♂; 7, 7 *a*, ♀.)

Sphongophorus (*Cladonota*) *latifrons,* Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 274[1].

Hab. MEXICO (*Mus. Holm.*[1]; *Mus. Brit.*; *Mus. Vind. Cæs.*; *Sallé*), Cuernavaca in Morelos, Sayula in Jalisco, Acapulco in Guerrero (*Höge*).

In this species the males and females differ considerably as regards the pronotal processes. We figure a male from Sayula and a female from Acapulco.

There is a peculiar specimen in our collection, from Totonicapam, Guatemala, 10,000 feet, of a brown colour, and rugose, with mottled tegmina, and with the anterior process almost straight and only slightly curved at the apex, which is pointed. Unfortunately this specimen is broken and cannot be described; but it belongs to the subgenus *Cladonota*, for there is the base of a stout intermediate process remaining, and part of a triangular apical process; it is almost 9 millim. in length, and the height to the tip of the apical process is 7 millim.

7. **Sphongophorus (Lobocladisca) biclavatus.** (Tab. III. figg. 4, 4 *a*.)

Centrotus biclavatus, Westw. in Duncan's Nat. Libr., Ent. i. p. 286, t. 25. fig. 3 [1].

Sphongophorus biclavatus, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 262, t. 4. fig. 4 [2].

Hab. Panama, Bugaba 1000 feet (*Champion*).—South America [1].

8. **Sphongophorus (Lobocladisca) guerini.** (Tab. III. figg. 8, 8 *a*.)

Sphongophorus guerinii, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 262, t. 4. fig. 1 [1].

Hab. Panama, David in Chiriqui (*Champion*).—Brazil, Minas Geraes [1].

In this species the posterior horn is as much elevated as, or even more so than, the anterior; the latter is almost straight, or only a little curved at the apex.

One specimen from Chiriqui, which we figure.

Subfam. *HOPLOPHORINÆ.*

This subfamily, though not a large one, contains several important genera; they may be known by the very short posterior tarsi, and may be distinguished as follows:—

I. Wings with four apical cells.
  1. Pronotum with the lateral angles produced into sharp horns, and with its sides more or less compressed and elevated . *Triquetra*, Fairm.
  2. Pronotum with the lateral angles at most obtusely prominent.
    A. Pronotum simple and not produced in front . . . . . *Ochropepla*, Stål.
    B. Pronotum produced into a porrect horn in front.
      a. Horn of pronotum blunt; pronotum not carinate at sides, with the posterior process short, scarcely reaching beyond apex of abdomen . . . . . *Potnia*, Stål.
      b. Horn of pronotum long and sharp; pronotum carinate at sides, with the posterior process long, reaching almost to apex of tegmina . . . . . *Aconophoroides*, gen. nov.

II. Wings with three apical cells.
  1. Posterior process of pronotum not or scarcely reaching beyond apex of abdomen; anal cells of wings larger.
    A. Pronotum narrowed evenly from shoulder to apex; head broader.
      a. Pronotum with a stout blunt dorsal horn, inclined forward, and situated at some distance from the metopidium, sometimes reduced to a raised prominence, or entirely wanting; tegmina extending for about one-third their length beyond apex of pronotum . . . . *Platycotis*, Stål.
      b. Pronotum produced into a straight blunt process, the back of which is exactly level with the dorsum; tegmina long, extending for almost half their length beyond apex of pronotum . . . . . *Orthoplophora*, gen. nov.

B. Pronotum shield-shaped, sinuate behind shoulders, broad, with apex blunt, and without dorsal horn or prominence; head narrower . . . . . *Hoplophora*, Germ.

2. Posterior process of pronotum long and sharp, reaching nearly or quite to apex of tegmina; anal cells of wings small; dorsum with a strong, usually sharp and spinose, horn, situated at a greater or lesser distance from the metopidium . . . . . *Umbonia*, Burm.

TRIQUETRA.

Triquetra, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 279 (1846); Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 265 (1869).

This is rather an important genus, containing about a dozen species, which are, for the most part, recorded from Bogota; one or two occur in Venezuela and Brazil. *Triquetra* is very poorly represented in Central America, except in the case of one species, which appears to be locally abundant. The species are, as a rule, rather large, and have the humeral projections much developed, forming long pointed horns; the front of the pronotum is in some species armed with a longer or shorter horn, and in others merely bluntly rounded or subangulate. The insects are of the same colour in life as the thorny plants or shrubs which they frequent, and, as they sit close to the stalks, they may easily be mistaken (as in the case of the species of *Umbonia*) for thorny excrescences, their somewhat formidable appearance being therefore merely protective.

The genus is allied to *Umbonia*, but differs in the strongly tectiform pronotum and in the fact that the wings have four apical areas; the humeral projections, moreover, are, as a rule, much longer and more slender.

1. **Triquetra grossa.** (Tab. III. figg. 10, 10 *a*.)

Triquetra grossa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 280 [1].
Triquetra virgata, Fairm. loc. cit. p. 282 [2].
♀. *Triquetra virescens*, Fairm. loc. cit. p. 281 [3].
Umbonia terribilis, Walk. Ins. Saunders., Homopt. p. 66 [4].

Hab. Guatemala, Cubilguitz and San Gerónimo in Vera Paz, El Tumbador, Cerro Zunil, Panajachel 5000 feet, Pampojilaj (*Champion*); Costa Rica (*Mus. Vind. Cæs.*), Volcan de Irazu 6000 to 7000 feet, R. Sucio, Caché (*Rogers*); Panama, Boquete 3500 feet, Volcan de Chiriqui (*Champion*).—Colombia [1 4], Bogota [2 3] (*Mus. Roy. Belg.*; *Mus. Vind. Cæs.*); Venezuela.

I have placed the above names under *T. grossa* after examining a large series. Fairmaire [2] himself says of *T. virgata* that it closely resembles *T. virescens*, and Stål

remarks, "A præcedente [i. e. *T. virescens*] vix differt"; *T. grossa* and *T. virgata*, however, are more closely allied in general appearance to one another than to *T. virescens*, which appears to be a smaller form of the male with the humeral horns rather shorter and less slender. Among specimens in our collection from Irazu there are males just like Signoret's typical specimen of *T. virescens* referred to by Fairmaire (which I have before me), and females exactly like his *T. grossa*. On comparing a large series it is evident that there is considerable variation in the length and direction and the straightness or slight recurvation of both the dorsal and humeral horns, and that it would be very easy to describe fresh species if it were not for intermediate forms leading from one to the other. In the Vienna Museum collection there are only five specimens belonging to these three so-called species, four females and one male—the male being placed under *T. virescens*, two females (which differ considerably *inter se*) under *T. virgata*, and two females under *T. grossa*. On comparing them, however, with the series in our collection it is obvious that they must all be referred to one species. A specimen from Panajachel is figured.

2. **Triquetra veruta,** sp. n. (Tab. III. figg. 9, 9 *a*.)

Minor, fusco-brunnea; pronoto longo, angustiori, fortiter punctato, rugoso, humeris modice prominentibus, haud porrectis, nigris; cornu dorsali elongato, fere recto, acuto, lateribus ab humeris angustatis, in processum apicalem longum productis; tegminibus brunneis, venis dilutioribus, margine externo apicem versus hyalino; pedibus abdomineque brunneis vel fusco-brunneis.

A comparatively small and narrow species, of a dark brown colour, with the pronotum very coarsely and rugosely punctured in irregular rows; humeral prominences moderately long, at right angles to the pronotum, and not extended forward; dorsal horn long and sharp, almost straight, but very slightly recurved at the apex, ribbed at the sides; dorsal raised line continued from above the head to the tip of the horn, and thence to the apex of the pronotum, which is long and extends considerably beyond the abdomen, but not to the apex of the tegmina; tegmina and legs brown, the former with the veins lighter.

Long. 9, cum tegm. 10 millim.; lat. inter cornua 6 millim.

Hab. PANAMA (*Boucard, in Mus. Holm.*).

I found a male specimen of this distinct little species among some undetermined Homoptera sent me for examination by Dr. Aurivillius; it is allied to *Umbonia obscura*, Walk., but differs entirely in the shape of the humeral horns of the pronotum.

3. **Triquetra apicalis.** (Tab. III. figg. 11, 11 *a*.)

Umbonia apicalis, Walk. List of Homopt. Ins. ii. p. 518[1].

Hab. PANAMA, Bugaba (*Champion*).—COLOMBIA [1].

This species may easily be distinguished from the preceding by the formation of the humeral and dorsal horns, which are long and acute, and extended forward in front of the head, so that, if viewed sideways, their tips are almost on a level, that of the dorsal horn projecting rather further forward than the other. It is also allied to *Triquetra* (*Umbonia*) *turrita*, Fairm.; but that insect, which inhabits Brazil, is rather

longer and broader, with the dorsal horn shorter, less porrect, and blunter at the apex, and the humeral horns are much less porrect and recurved, so that, if viewed from the side, they do not project beyond the metopidium.

It is possible that this species, with *T. veruta*, *T. turrita*, and *T. obscura*, ought to be placed in a separate genus; in facies they differ very much from the ordinary testaceous forms of *Triquetra*.

UMBONIA.

Umbonia, Burmeister, Handb. Ent. ii. 1, p. 138 (1835); Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 274; Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 264 (1869).

About seven or eight species are comprised in this genus; they appear to be confined to Central and Tropical South America; one species, *U. amazili*, is recorded by Fairmaire from North America, but I have not seen a specimen of this insect, and Stål omits it from his list of the genus. The species are distinguished by having the pronotum armed with a longer or shorter dorsal horn, and by the shoulders being more or less acutely produced and cornute. The wings have four apical cells, and their anal areas are minute and not lobate; the posterior process of the pronotum is continued almost, if not quite, to the apex of the tegmina, and sometimes projects beyond them. The genus is allied to *Triquetra*, but the species are, as a rule, stouter insects and less tectiform, with the humeral processes much less developed. The two species described by Amyot and Serville (Hist. Nat. des Ins. Hémipt. p. 543) as belonging to their genus *Physoplia* (*P. crassicornis* and *P. nigrata*) are really forms of the male of *Umbonia orozimbo*.

The species of *Umbonia*, like those of *Triquetra* and *Ianthe*, frequent thorny plants, so that the horn-like processes are distinctly protective appendages.

1. **Umbonia reclinata.** (Tab. III. figg. 12, 12 *a*.)

Hoplophora reclinata, Germ. Rev. Ent. Silb. iii. p. 243[1].
Umbonia reclinata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 276[2].
Umbonia funesta, Stål, Öfv. Vet.-Ak. Förh. xi. p. 249 (1854)[3].
Umbonia multiformis, Walk. List of Homopt. Ins., Suppl. p. 129[4].

Hab. Mexico[1 2] (*Mus. Brit.*; *Sallé*[4]), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*), Jalapa (*Höge*), Orizaba (*H. H. Smith*; *F. D. G.*); Guatemala (*Sallé*), Lanquin and San Gerónimo in Vera Paz (*Champion*); Costa Rica (*Van Patten*).—Brazil.

This species is somewhat variable in colour, but may usually be known by its prevailing red tint, as well as by the short humeral prominences and short strongly recurved dorsal horn, which is situated at a considerable distance behind the shoulders. The locality for *U. funesta*, Stål, is given[3] as "Central America." A specimen of *U. reclinata* from Jalapa is figured.

2. **Umbonia ataliba.** (Tab. III. figg. 14, 14 *a*.)

Umbonia ataliba, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 278, t. 6. fig. 1 [1].
Umbonia lativitta, Walk. List of Homopt. Ins. ii. p. 520 [2].

Hab. Costa Rica, Caché (*Rogers*); Panama (*Boucard*), Volcan de Chiriqui (*Champion*). —South America [1], Brazil [2].

The males, as a rule, appear to be considerably smaller than the females. A specimen from Panama is figured.

3. **Umbonia pyramidalis.**

Umbonia pyramidalis, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 277 [1].
Umbonia reducta, Walk. List of Homopt. Ins. ii. p. 520 [2].

Hab. Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*). — Amazons, Pará [2]; Brazil [1].

This species, of which one male specimen has been received from Chiriqui, is very closely allied to *U. ataliba*, and may prove to be merely a variety of that species; it is rather smaller, and has a black marking on the dorsal horn in front and behind, which is sometimes absent. *U. pyramidalis* and *U. ataliba* may be distinguished by the long sharp dorsal horn and the long convex metopidium, which arises from the fact that the horn is set some way back between the shoulders, and forms a somewhat abrupt angle with the metopidium instead of gradually sloping into it.

4. **Umbonia spinosa.**

Membracis spinosa, Fabr. Syst. Ent. p. 675 (1775) [1].
Centrotus spinosus, Fabr. Syst. Rhyng. p. 17 [2].
Hoplophora spinosa, Germ. Rev. Ent. Silb. iii. p. 243 [3].
Umbonia spinosa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 276 [4]; Walk. List of Homopt. Ins. ii. p. 519 [5].
Membracis armata, Oliv. Encycl. Méth. vii. p. 668 [6].
La Cigale armée, Stoll, Cig. p. 83, t. 21. fig. 116 (De Piekdraagster) [7].

Hab. Guatemala, Teleman in Vera Paz, San Isidro (*Champion*); Panama, Bugaba, Volcan de Chiriqui 2500 to 4000 feet, Peña Blanca 3000 to 4000 feet, Tolé (*Champion*).—South America, Surinam [6 7], Cayenne [5], Brazil [4 5].

This species seems to be very scarce in Central America, as there are only seven specimens in our collection from six localities. Stål considers the *U. spinosa* of Fairmaire to be a different insect to the *U. spinosa* of Fabricius, and names the former *U. curvispina*; I have only seen one specimen, in the Belgian Museum collection, and it appears to be nothing more than a form of *U. spinosa*, Fabr. The older writers speak of the insect as "sex rubro-lineata" or "avec six lignes rayonnantes," and of *U. ataliba* as "quadrilineata." It must be remembered that these lines are

reckoned from the tip of the dorsal horn, so that the continuous line passing over the horn from the apex of the pronotum to the front margin of the metopidium counts as two.

5. **Umbonia orozimbo.** (Tab. III. figg. 15, 15 *a*–20, 20 *a*.)

Umbonia orozimbo, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 377, t. 6. fig. 2 [1].
Umbonia picta, Walk. List of Homopt. Ins., Suppl. p. 130 [2].
Umbonia decorata, Walk. loc. cit. p. 130 [3].
♂. *Physoplia crassicornis,* Am. et Serv. Hist. Nat. des Ins. Hémipt. p. 543 [4].
♂. *Physoplia nigrata,* Am. et Serv. loc. cit. p. 543 [5].
♂. *Physoplia media,* Walk. List of Homopt. Ins. ii. p. 516 [6].
♂. *Physoplia intermedia,* Walk. Ins. Saunders., Homopt. p. 66 [7].

Hab. North America, Florida? [5].—Mexico [1 4 6] (*Sallé* [2 3]), Omilteme 8000 feet, Xucumanatlan, Amula, and Tierra Colorada in Guerrero, Teapa in Tabasco (*H. H. Smith*), Jalapa (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Lanquin, Cahabon, and San Gerónimo in Vera Paz, El Tumbador, Las Mercedes, Coatepeque, El Reposo, Paraiso, Cerro Zunil, San Isidro, Volcan de Atitlan (*Champion*); Costa Rica (*Van Patten*); Panama (*Boucard*), Bugaba, Tolé, Taboga Island (*Champion*).—Colombia [1 7]; Brazil [1].

This is an extraordinarily variable species, and it is only after careful examination of a long series that a right idea can be formed regarding it; the females vary to a certain extent in colour, and in the size and formation of the dorsal horn, but the variation in this sex is very slight compared with that of the male. No two insects at first sight would seem more distinct than the large dark males with enormously developed dorsal horns, which represent the *Physoplia nigrata* of Amyot and Serville, and the small males from El Reposo and Las Mercedes, and Tolé, Panama, which scarcely differ from the females, except in being smaller and having the horn slightly thickened and recurved; and yet in the large series in our collection (which consists of about 400 specimens) there are intermediate forms which lead gradually up from the one to the other without a break. I examined all the specimens and determined their sexes, as well as series in other collections, and found that in no case had the female a strongly thickened horn; this led me to believe that *U. crassicornis* and *U. nigrata* must be the males of *U. orozimbo*, and on examining large series from the same localities it was evident that this was the case. Stål says of these two species, which he includes in a separate division of the genus, "Feminas hujus divisionis haud vidi"; he identifies *Physoplia intermedia*, Walker, as a form of the male of *U. orozimbo*, but had evidently not enough material on which to proceed further.

The ordinary colour of the females is greenish with yellowish or yellowish-red stripes, but the colour is very variable, some being yellowish with dark red stripes like *U. ataliba*, and others, again, reddish-brown or olivaceous; the males vary from a

yellowish or olivaceous tint to almost black; in the varieties with strongly thickened horns the latter are always dark. In all the specimens, both male and female, the lines on the metopidium have a tendency to run one into the other, and this serves as a rough character for distinguishing the species.

It would take too much space to notice each of the series in detail, but the small males above referred to and a small variable series of the thick-horned males from Amula, Guerrero, are especially worthy of mention.

We figure six specimens of this variable insect: fig. 15 is taken from a female from Jalapa; fig. 16 from a male from Amula; fig. 17 from a female from Tierra Colorada; fig. 18 from a female from Omilteme; fig. 19 from a male from Amula; fig. 20 from a male from El Reposo.

6. **Umbonia orizabæ,** sp. n. (Tab. III. figg. 21, 21 *a*, ♂; 22, ♀.)

Parva, olivaceo-viridis vel olivacea, fusco- vel fusco-rubro radiata; metopidio longo ante cornu dorsale late rotundato, supra caput rubro; cornu dorsali in utroque sexu brevi, acuto, recurvo, apice rubro; lineâ elevatâ pronoti distinctâ, rubrâ, apice acuto; tegminibus hyalinis, venis fuscis vel brunneis; pedibus testaceis vel rubro-testaceis, tarsis anticis et intermediis fuscis.

A small species, with the male and female very similar, the horn being not thickened in the former, but in both cases short, sharp, and strongly recurved; the colour is olivaceous, with the front of the metopidium, the tip of the dorsal horn, and the dorsal elevated line red, and the rays fuscous, the broad ones in front being sometimes reddish; the metopidium is long in front of the dorsal horn, and is shaped much as in *U. ataliba*; the pronotum does not quite reach the apex of the tegmina.

♂. Long. cum tegm. $8\frac{1}{2}$–10 millim.; lat. inter cornua 5–$5\frac{1}{2}$ millim.
♀. Long. cum tegm. 11 millim.; lat. inter cornua 7 millim.

Hab. Mexico, Orizaba (*H. H. Smith & F. D. G.*).

Eleven males and seven females. I have considerable hesitation in naming this insect, both sexes of which are figured, as it is probably only a peculiar race of *U. orozimbo*, but have done so on the similarity of the sexes with regard to the short, sharp, recurved dorsal horn and the shape of the metopidium. Among the large series of *U. orozimbo* there are several small males that closely resemble this species; but the horns are usually larger, and in some examples at least are thickened, and the metopidium, though variable, appears to be more sloping than in *U. orizabæ*, and not so abrupt before the dorsal horn.

Among some undetermined Homoptera sent me from the Stockholm Museum, I find a ingle small specimen of an *Umbonia* (a female) labelled "Mexico (Boucard)," which I think must be referred to this species as a variety. It has the horn set far back, and the metopidium long and rounded; the insect is, however, rather stouter, with bright orange instead of fuscous rays, and the legs are testaceous, with orange markings. It may belong to a new species, but I should not care to describe it on a single specimen.

7. **Umbonia gladius.** (Tab. III. figg. 13, 13 *a*.)

Umbonia gladius, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 275, t. 6. figg. 4, 5 [1].

Hab. Mexico, Valladolid and Temax in Yucatan (*Gaumer*), Campeachy [1].

About twenty-five examples, all, with one exception, females. This species appears to belong to *Umbonia*, although it differs from the other members of the genus by its broad, compressed, perpendicular horn. *U. gladius* appears to be either rare or very local, for I have not seen it in any other collection. I have not had the opportunity of examining the type-specimen which Fairmaire records as in Guérin's collection, but his description and figure easily admit of identification. The single male specimen above referred to is much smaller than the females, with the dorsal horn shorter, and the pronotum only slightly reaching beyond the abdomen, and the tegmina projecting considerably beyond its apex.

A specimen from Valladolid is figured.

HOPLOPHORA.

Hoplophora, Germar, Rev. Ent. Silb. iii. p. 240 (1835); Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 269; Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 37; ibid. Öfv. Vet.-Ak. Förh. xxvi. p. 264 (1869).

This genus, as restricted by Stål, contains about a dozen species from Central or Tropical South America, and one is recorded by Fairmaire from North America; they are stout and broad insects, varying considerably in size, with the pronotum short and shield-shaped, sinuate behind the horns, which are short and blunt, then nearly parallel for a certain distance, and then gradually narrowed to a sharp point, which scarcely reaches the apex of the body; the tegmina are much longer than the pronotum, and are furnished with long, more or less oblong areas, bounded by distinct thick veins; there is no trace of a dorsal horn. The genus may be easily distinguished from *Platycotis* (apart from the dorsal horn or process, which in the latter genus is occasionally almost wanting) by the much narrower head and by the shape of the pronotum behind the horns.

1. **Hoplophora monogramma.**

Hoplophora monogramma, Germ. Rev. Ent. Silb. iii. p. 242 [1].

Hoplophora sanguinosa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 270 [2].

Hab. Mexico [1 2], Omilteme and Xautipa in Guerrero (*H. H. Smith*), Jalisco (*Schumann*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Oaxaca; Guatemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

This species is very variable in size and colour; it may, however, be distinguished by the fact that the central keel of the pronotum from the centre of the dorsum to just

above the head is black, shining, and strongly marked, and by the arrangement of the dark spots at the base and across the middle of the tegmina. There appear to be three well-marked forms—one (var. *a*) of a brownish colour, with dark markings; another (var. *b*) of a light yellowish-grey colour, with red markings; and a third (var. *c*) of a more or less bright red colour, with the front of the pronotum just above the head yellowish. This latter, as is evident from the description, is the *H. sanguinosa* of Fairmaire. It varies in size from 8 to 10 millim. "cum tegminibus"; the yellowish-grey variety with red markings (var. *b*) is apparently confined to high altitudes, all the specimens being from places with an elevation of from 4000 to 8000 feet.

2. **Hoplophora signoreti,** sp. n. (Tab. III. figg. 23, 23 *a*.)

Lata, capite pronotoque ferrugineis, hoc unicolori, fortiter rugoso-punctato, lineis nonnullis elevatis inæqualibus lineæ dorsali elevatæ toti rubræ parallelis; tegminibus hyalinis, venis nigris vel brunneo-nigris ad basin partim flavis, maculis quibusdam nigris instructis; pedibus ferrugineis, tarsis anticis et intermediis nigro-fuscis.

A large species, with the head and pronotum entirely ferruginous, the latter strongly and rugosely punctate, especially on the dorsum, and with several uneven raised lines parallel to the dorsal line, which is raised and red throughout; humeral projections very blunt, very slightly projecting; tegmina hyaline, with the veins darker or lighter brown, partly yellowish at the base, with two black spots one above the other close to the base, and an irregular band of spots across the middle; legs ferruginous, with the anterior and intermediate tarsi black; male smaller than female, with the veins and underside darker.

♀. Long. 10 millim.; cum tegm. 14 millim.

♂. Long. 8 millim.; cum tegm. 11 millim.

Hab. MEXICO (*coll. Signoret*).

Two specimens. These are named *H. sanguinosa* in Signoret's collection, but, as Fairmaire's description manifestly does not apply to them but to the preceding species, I have separated them; his description is as follows:—"Fortement ponctué, d'un beau rouge; bord antérieur jaune, carène noire antérieurement." There is another specimen under *H. sanguinosa* in Signoret's collection, of a dark brown colour, with darker markings, and the margins of the pronotum and central line in part clear red, which may be a variety of the preceding, though I should rather refer it to the present species.

3. **Hoplophora cinerea.** (Tab. III. figg. 24, 24 *a*.)

Hoplophora cinerea, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 272 [1].

Hab. MEXICO [1], Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Teleman and Panzos in Vera Paz, Zapote, Capetillo (*Champion*).

This species is represented in our collection by a far greater number of examples than any other of the genus, and it seems to have been taken very plentifully by Mr. Champion at Teleman; it does not appear to be a common insect, to judge by other collections. *H. cinerea* may easily be known by its broad convex form, uniform brown

colour, the strongly raised dorsal lines, and the blunt apex of the pronotum, and especially by the auriculate projections (they can hardly be called horns) at the sides of the pronotum above the shoulders; if viewed from the front the female insect bears a striking resemblance to a pug dog. The males are smaller than the females, and have the humeral projections less auriculate, less developed, and more rounded at the apex. A specimen from Capetillo is figured.

Var. **obfuscata.**

Minor, angustior, brunnea, nigro-notata vel tota fusca, humeris minus prominentibus. An nova species?

Smaller and narrower than the type, variegated fuscous-brown with black markings, or of a unicolorous fuscous colour, with the humeral prominences less marked and less auriculate.

Hab. GUATEMALA, Zapote, Capetillo (*Champion*).

Three male specimens. At first sight this looks a very distinct species, and may perhaps ultimately prove to be so, but when compared with a small male of the type-form of *H. cinerea* it agrees with it structurally in almost every point except those above specified. The type-specimen resembles the dark form of *H. monogramma*, for it has the raised keel black in front; it is, however, only black in front of the humeral prominences, and the insect may be at once separated from the last-named species by the form of the pronotum, which is short and very blunt at the apex, and has the peculiar shape of that of the ordinary form of *H. cinerea*. If the female of the variety is discovered it may be found to be distinct from that of the type.

4. **Hoplophora disparipes,** sp. n. (Tab. III. figg. 25, 25 *a*.)

Parvus, pronoto griseo vel flavo-cinereo, nigro-notato, sat dense nigro piloso, fortiter punctato, lineâ dorsali elevatâ et tribus utrinque inæqualibus instructo, humeris obtuse prominulis, dorso ad medium obtusissime elevato, apice producto breviter acuto; tegminibus hyalinis, venis brunneo-nigris vel brunneis; pedibus testaceis, anticis et intermediis elongatis, tarsis fuscis, posticis multo brevioribus; corpore subtus nigro vel nigro-fusco.

Femina paullo latior, humeris magis prominulis, leviter auriculatis.

A small griseous or cinereous species, variable in size and colour, with black markings on the pronotum, which are usually very distinct, but occasionally almost absent on the hinder portion; the pronotum is raised in the middle of the disc, and is somewhat rugose, with a strongly raised dorsal line and three rather irregular raised lines on each side, and is strongly pilose, especially in front; humeral prominences variable, small in male, larger and subauriculate in female, the apex produced into a short and acute beak; tegmina hyaline, with the veins brown or yellowish, and with indistinct dark markings across the middle, sometimes almost absent or only visible near the costa; legs testaceous, the anterior and intermediate pairs long, with the tarsi elongate and fuscous, the posterior pair very short, with extremely short testaceous tarsi; underside of the body black or fuscous, the anal segment of the male with a large yellow spot on each side, and the side sternal pieces more or less yellow in both sexes.

Long. 4–6, cum. tegm. 5–7 millim.; lat. inter cornua 4–4½ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Four male and two female specimens.

5. **Hoplophora concinna,** sp. n. (Tab. IV. figg. 1, 1 *a*, *b*.)

Minima, brevis; pronoto fortiter punctato læte ferrugineo, supra caput utrinque nigro-notato, vitta albida mox ante apicem, deinde apice late fusco, extremo ipso albido excepto, humeris obtuse prominulis, linea dorsali et quibusdam utrinque inæqualibus elevatis; tegminibus hyalinis, venis fuscis ad basin dilutioribus, margine costali præcipue ad basin punctato, maculis nigris distinctis; pedibus testaceis, posticis brevissimis.

A very small, short species, with the pronotum of a bright ferruginous colour, with two large fuscous markings on the metopidium extending from the front margin to just behind the humeral prominences, which are short and blunt; on the dorsal surface there is a whitish band before the apex, followed by a dark one covering the whole of the apex, except the extreme tip, which is whitish; the punctuation is rather strong, and there is a strongly raised dorsal line and two or three more or less irregular raised lines on each side of this; tegmina with the veins fuscous, lighter towards the base, with large distinct dark markings across the middle and on the costa between these and the base, the costal margin punctured, especially towards the base; legs and underside testaceous, posterior legs very short.

Long. $3\frac{1}{2}$, cum tegm. 5 millim.; lat. 3 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 feet (*Champion*).

One male specimen. This is a very distinct little species; the hind legs in the whole family are shorter than the others, but in this and in *H. disparipes* this characteristic appears to be especially marked.

The subgenus *Enchotype*, Stål, does not appear to be represented in our collection; it resembles *Hoplophora* in having a comparatively narrow head and three apical cells to the wings, but in several other points it appears rather to resemble *Potnia*, Stål.

PLATYCOTIS.

Platycotis, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 36 (1869).

This genus is here considered as including the subgenera *Lophopelta*, Stål, and *Microschema*, Stål; they all three differ from *Hoplophora* in the much broader head and in the fact that the pronotum is not subparallel behind the shoulders, and shield-shaped, but is narrowed from the base; the differences *inter se*, however, are mostly comparative, and as far as the dorsal horn is concerned in certain species of *Lophopelta*, as well as of *Platycotis*, it is in part or entirely wanting. It may be well, perhaps, to add Stål's description of the subgenera (*l. c. supra*, p. 37, nota):—

a. Thorace antice maxime declivi, margine antico inter oculos late sinuato.	
b. Thorace anterius convexo vel inermi vel medio ante angulos laterales cornu compresso, plus minus porrecto, armato . .	Subg. *Platycotis*, Stål.
bb. Thorace anterius convexo, dorso pone angulos laterales, cornu vel processu instructo	Subg. *Lophopelta*, Stål.
aa. Thorace anterius minus convexo, sensim et haud perpendiculariter declivi, margine antico inter oculos recto, angulis lateralibus haud vel vix prominulis, processu postico a basi primum levissime, dein sensim distincte angustato	Subg. *Microschema*, Stål.

1. **Platycotis acutangula.**

Platycotis acutangula, Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 263 [1].

Hab. MEXICO (*Mus. Holm.* [1]: ♀).

This species is described by Stål [1] as "Olivaceous-green, with the underside, head, and legs yellowish olivaceous; prothorax with a sprinkling of yellow, with the lateral angles strongly produced; tegmina greyish-hyaline, with the veins greenish towards the base, infuscate towards the apex, and the base of the clavus and of the costal and radial areas of the corium punctured, olivaceous-green, and sprinkled with yellow. Long. 7, lat. 4, lat. inter ang. lat. thor. $5\frac{1}{2}$ millim."

2. **Platycotis tuberculata.** (Tab. IV. figg. 2, 2 *a*; 3, 3 *a*, *b*, var.)

Hoplophora tuberculata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 273, t. 6. fig. 9 [1].
Lophopelta tuberculata, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 37 [2].
Hoplophora ornata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 274 [3].

Hab. NORTH AMERICA, California [1].—MEXICO [2 3], Amula and Xucumanatlan in Guerrero 6000 to 7000 feet (*H. H. Smith*), Jalapa (*Höge*).

There are two specimens from Mexico in the Vienna Museum under the name of *Umbonia ornata.* It is quite plain from Fairmaire's description and figure [1] that this insect is his *H. tuberculata*, which he describes as from California. *H. ornata*, described as from Mexico, is most probably a variety of the same species, and I have, though with some doubt, as I have not seen the insect, regarded it as synonymous with his *H. tuberculata.* The dorsal horn of *P. tuberculata* is very variable, being either longer than its breadth at the base, and extended considerably forward, or very short and not porrect, or altogether wanting and represented by a blunt prominence. Our fig. 2 is taken from an example from Jalapa.

3. **Platycotis discreta,** sp. n. (Tab. IV. figg. 4, 4 *a*, *b*.)

Ochraceo-cinerea vel cinerea, pronoto sat fortiter punctato, haud rugoso; metopidio nigris maculis supra caput et inter humeros, humeris breviter productis, nigris; dorso fere inermi tuberculo vix elevato nigrâ lineâ circumcincto, lineâ dorsali fortiter elevatâ ad apicem et antice nigrâ, quoad cetera cum colore prothoracis congruenti; tegminibus hyalinis, venis brunneis, clavo et margine costali fortiter punctatis versus basin brunneis; pedibus testaceis nigro-maculatis.

Of an ashy-ochraceous or ashy colour; head very broad, with the hind margins and a central transverse line black; pronotum strongly punctured, not rugose, with black markings above the head and between the shoulders, which are only slightly produced; in the type these black markings consist of a line on each side of the dorsal line, which they touch between the shoulders, and two black points on each side of these; shoulders black; on the back there is a very blunt, scarcely raised tubercle, surrounded by a black circle, more or less distinctly marked, and there is a small patch of black on each side, touching the margins, at some distance before the apex; dorsal line strongly raised, black in front and at the apex; tegmina hyaline, with the veins fuscous, in part brown, indistinctly variegated with greenish and brownish markings, with the clavus and costal margin strongly punctured; underside and legs testaceous, the latter spotted with black. Long. 8, cum tegm. 11 millim.; lat. inter cornua 5 millim.

Hab. GUATEMALA, San Joaquin and Cubulco in Vera Paz (*Champion*).

Two female specimens. This species is allied to *Hoplophora humilis*, Walk. (List of Homopt. Ins. ii. p. 514), but differs in being broader, with the humeral projections much more marked, and also in coloration. A specimen from San Joaquin is figured.

4. **Platycotis histrionica.** (Tab. IV. figg. 5, 5 *a*.)

Hoplophora histrionica, Stål, Stett. ent. Zeit. 1864, p. 69 [1].
Lophopelta histrionica, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 37 [2].

Hab. MEXICO (*Boucard*), Omilteme in Guerrero 8000 feet (*H. H. Smith*), Jalapa (*Höge*), Vera Cruz (*Mus. Holm.* [1]); GUATEMALA, Cerro Zunil, San Gerónimo (*Champion*).

All the specimens yet discovered are females. The dorsal horn in this species varies considerably, as in *P. tuberculata*. Among some unnamed Membracidæ from the Stockholm Museum I found a specimen of a *Platycotis* similar to those in our collection from the various localities mentioned above, and I therefore described them as a new species; but they agreed so closely with the description of *P. histrionica* that I asked Dr. Aurivillius to compare his specimen with the unique type of that species in the Stockholm Museum, and he tells me that *P. histrionica* only differs from the insect in question in having the dorsal horn nearly twice as long, and the pronotum reaching the apex of the abdomen and more tapering at the end. I have therefore suppressed my species, and included it under *P. histrionica*; had I not very carefully compared it with Stål's description I should certainly have felt justified in treating it as new from the fact of its having been sent out as unknown from the Stockholm Museum, which contained the unique type of *P. histrionica*. We figure a specimen from San Gerónimo.

5. **Platycotis nigro-rufa.**

Hemiptycha nigro-rufa, Walk. List of Homopt. Ins., Suppl. p. 143 [1].

Hab. MEXICO [1] (*Mus. Brit.*), Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*); GUATEMALA, Quezaltenango 7800 feet (*Champion*).

This insect, which Walker described as a *Hemiptycha*, although it has nothing in common with that genus, is a very distinct *Platycotis* of a brick-red colour variegated with black. It is of about the same size as the preceding species. The two examples in our collection are mostly griseous, and may belong to another species, though they do not appear to be sufficiently different structurally to be separated.

OCHROPEPLA.

Ochropepla, Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 268 (1869).

This genus contains three or four small species from Central America and the adjoining regions; they are mostly of a unicolorous testaceous colour, occasionally with dark markings on the head and on the front of the pronotum or on the tegmina; the

pronotum is unarmed and the wings have four apical cells; the upper cell, however, is occasionally extremely minute; the shoulders are very slightly and bluntly prominent; the pronotum is obtriangular in shape, strongly punctured, with a distinct dorsal elevated line, and more or less distinct raised lines on each side of it.

1. **Ochropepla corrosa.** (Tab. IV. figg. 6, 6 *a*, *b*.)

Hoplophora corrosa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 272, t. 6. fig. 11 [1].
Ochropepla corrosa, Stål, Öfv. Vet.-Akad. Förh. xxvi. p. 268 [2].
Hoplophora punctum, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 272 [3].
Ochropepla punctum, Stål, Öfv. Vet.-Akad. Förh. xxvi. p. 268 [4].

Hab. PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).—COLOMBIA [3], Bogota [1].

One female specimen from Chiriqui, which we figure. I have examined the type-specimen of *O. corrosa*, which, as Stål remarks, has the tegmina of abnormal length; in other points, however, it scarcely appears to differ from *O. punctum*, and I have therefore regarded them as synonymous. Stål remarks of *O. punctum*: "Ab *O. corrosa* vix differt, nisi magnitudine minore tegminibusque brevioribus."

2. **Ochropepla pallens.**

Ochropepla pallens, Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 268 [1].

Hab. MEXICO [1], Teapa in Tabasco (*H. H. Smith*).

We have received a male and a female of this insect from Tabasco. Stål says of this species: "*O. corrosæ* simillima, minor, paullo latior et convexior, processu postico thoracis paullo latiore, tegminibus brevioribus, parte sextâ apicali pone abdomen extensâ: e Mexico. An distincta?" *O. pallens* certainly resembles *O. corrosa* very closely, but it is so much smaller that it can hardly be considered as identical unless intermediate forms are discovered.

Triquetra hebes, Walk. (List of Homopt. Ins. ii. p. 525), closely resembles *O. pallens*, and must, I think, at all events, be referred to this genus.

3. **Ochropepla inæqualis,** sp. n. (Tab. IV. figg. 8, 8 *a*, *b*.)

O. pallenti affinis, sed angustior, pronoto inæquali, fortiter punctato, utrinque pone humeros sat prominulos, et ante apicem, depresso, dorso late elevato, ochraceo vel ochraceo-brunneo, unicolori, vel maculis duabus fuscis plus minusve distinctis supra caput, et interdum maculis aliis indistinctis fuscis in disco vel ante apicem notato; tegminibus hyalinis, venis testaceis vel fuscis, nonnunquam fusco-notatis; pedibus testaceis, tarsis anticis et intermediis interdum infuscatis.

Closely allied to *O. pallens* but narrower, with the pronotum much less even, and appearing sinuate if viewed from the side, the elevated lines more marked and the humeral prominences more produced, the latter, if viewed from above, appearing very slightly recurved in some specimens; the colour is variable, being sometimes unicolorous ochraceous, but there are often two dark spots just above the head and sometimes others on the disc or towards the apex of the pronotum; some specimens are brownish or obscure ferruginous; the tegmina are coloured like the pronotum, being sometimes unicolorous, and sometimes marked with dark patches in the more darkly coloured specimens.

Long. $3\frac{1}{2}$, cum tegm. 5 millim.; lat. inter cornua 3 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A fair series; the sexes do not appear to differ externally to any appreciable extent.

4. **Ochropepla dubia,** sp. n. (Tab IV. figg. 7, 7 *a*, *b*.)

O. inæquali latior, pronoto brunneo, tuberculis quibusdam minutis flavescentibus adsperso, fortiter punctato; metopidio recto, haud inter humeros rotundato, lineâ dorsali valde elevatâ, ceterâ fere planâ, humeris obtuse prominulis, apice acuto paullo ultra abdomen producto; tegminibus hyalinis, clavo et corio ad basin fortiter punctatis; pedibus brunneis.

Rather larger and broader than *O. inæqualis*, with the pronotum deep brown, sprinkled with a few minute yellowish tubercles; metopidium flat, set at right angles to the rest of the pronotum, which is not gradually rounded from between the shoulders, as in the preceding species; central dorsal line very strongly elevated and distinct, not sinuate if viewed sideways; there are, however, only slight traces of other dorsal lines; tegmina rather long, hyaline, with the veins brown; legs brown.

Long. 4, cum tegm. $5\frac{1}{2}$ millim.; lat. inter cornua $3\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

This species, if viewed from above, bears a superficial resemblance to *O. inæqualis*, but may easily be distinguished by the characters above mentioned; the outer apical cell of the wings, however, is considerably larger than in the other specimens of *Ochropepla* which I have examined, and the tegmina are somewhat differently shaped, and their areas therefore somewhat dissimilar. I am not sure that it may not have to be referred to another genus.

POTNIA.

Potnia, Stål, Berl. ent. Zeitschr. x. p. 388 (1866).

The members of this genus may be distinguished by having the pronotum armed with a porrect horn in front and the wings with four apical cells; the humeral prominences are blunt, but distinct. The species in size and shape rather closely resemble certain of the broader forms of *Aconophora*, from which they may at once be separated by the very short posterior tarsi, which are the distinguishing characteristic of the Hoplophorinæ.

1. **Potnia granadensis.**

Hoplophora granadensis, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 273 [1].
Potnia granadensis, Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 267 [2].

Hab. Costa Rica, Caché (*Rogers*).—Colombia [1].

One female specimen from Costa Rica.

Stål (Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 37) cites *Hoplophora granadensis* as the type of his genus *Enchotype* (which closely resembles *Potnia* in appearance, and is distinguished by the wings having three instead of four apical cells); afterwards, however (*v.* Öfv. Vet.-Ak. Förh. xxvi. p. 267), on an examination of Signoret's typical

specimen, he discovered that *H. granadensis* was a *Potnia*, and that the insect he had quoted as the type of the genus *Enchotype* was really *H. fairmairei* and not *H. granadensis* at all. I have the insects before me, and they so closely resemble each other that they might well be confused by anyone who had to go by a description in either case. The genus *Enchotype* is not represented in our collection. The two specimens in Signoret's collection are from Bogota.

The specimen of *Potnia granadensis* above referred to as from Costa Rica has the horn broken and the pronotum sprinkled at the sides with minute ochraceous tubercles; but I think it must be placed under this species.

2. **Potnia brevicornis,** sp. n. (Tab. IV. figg. 9, 9 *a*.)

Parva, sat lata, testacea, capite longitudine multo latiori, rugoso, sæpius brunneo-variegato; metopidio supra caput late plicato, plus minusve brunneo; pronoto antice in cornu breve, latum, obtusum extenso, distincte et fortiter subrugosius punctato, carinâ centrali distinctâ, humeris prominulis, dorso a latere viso æquali, lateribus in processum apicalem sat longum sensim angustatis; tegminibus apicem prothoracis paullo superantibus, testaceo-hyalinis, ad basin punctatis; pedibus abdomineque flavo-testaceis, tarsis infuscatis.

A small and rather broad species, lighter or darker testaceous, with the head and metopidium more or less brown; pronotum with a strong central keel, strongly and closely punctured, produced in front into a very short, broad, and blunt process, the side viewed from above broadly sinuate and gradually narrowed into a long and somewhat deflexed apical process, which nearly reaches the apex of the tegmina; tegmina testaceous-hyaline, with strong brownish veins, which are sometimes variegated with darker colour on external margin; legs and abdomen yellow-testaceous, the tarsi more or less infuscate.

Long. 6 millim.; lat. int. hum. 3 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 6000 feet, Boquete, Caldera, David (*Champion*).

This species appears to come very near to *P. asodalis*, described by Dr. Goding (Ent. News, iii. p. 110) as from Marlo County, California. We figure a specimen from Boquete.

ORTHOPLOPHORA, gen. nov.

Elongata, angustior, pronoto cornu longo horizontaliter, haudquaquam oblique, porrecto, dorso ab apice pronoti usque ad apicem cornus frontalis æquali; metopidio ad marginem supra caput inter oculos fere recto; humeris prominulis subdeorsum versis; lateribus ab humeris angustatis in apicem acutum vix apicem abdominis superantem productis; tegminibus valde elongatis, areis quinque apicalibus, unâque discoidali; alis sat latis areis tribus apicalibus, nullâ discoidali; ocellis paullo magis ab oculis quam inter se distantibus.

Elongate and proportionally narrow, with the head broad, as broad as the base of the pronotum; pronotum armed with a long porrect blunt horn, which extends straight forward and forms an unbroken line with the dorsum from the apex—if anything it extends very slightly downward from the shoulders; viewed from above the pronotum is diamond-shaped, the front portion of the diamond being rather shorter than the hinder portion; the shoulders are moderately prominent and turned downwards if viewed from the front; the tegmina are very long, extending far beyond the apex of the pronotum, which just reaches beyond the apex of the abdomen, and they have five apical areas and one discoidal; the wings are broad and have three apical areas only and no discoidal; the hind legs and tarsi are proportionally longer than in most of the other members of the group.

The insect on which I have formed this genus bears a close resemblance at first sight to the figure of *Umbonia indicator*, Fairm. [Ann. Soc. Ent. Fr. sér. 2, iv. p. 279, t. 6. fig. 14 (in error for 15)], but the apex of the pronotum in the figure extends to the apex of the tegmina, and for this reason Fairmaire, certainly with considerable doubt, places it in *Umbonia*; the shoulders, moreover, in Fairmaire's insect are scarcely at all produced.

The genus above described is distinguished from *Potnia* by the quite horizontal, or, if anything, slightly deflexed horn, and the fact that the wings have four apical cells, and from *Enchotype* by its broader head (in which it resembles *Platycotis*), and, as in *Potnia*, by the formation of the horn; the general facies, moreover, is quite different from that of either genus.

1. **Orthoplophora salvini,** sp. n. (Tab. IV. figg. 10, 10 *a*.)

Grisea, pronoto fortiter punctato, lineâ dorsali vix elevatâ, ceterâ fere plano, nec lineis lateralibus instructo; capite lato, nigro ochraceo-maculato; metopidio duabus transversis maculis supra caput et supra has duobus punctis nigris; cornu unicolori, apice indistincte rubro excepto, utrinque ad basin vittâ latâ nigrâ usque ad maculam nigram parvam lateralem utrinque ad marginem pronoti paullo ante apicem positam; pronoti marginibus anguste rufis et vittâ indistinctâ rufâ supra humeros in metopidium continuatâ; tegminibus hyalinis, ad basin ochraceis, fortiter punctatis, areis subcostalibus flavo-rufescentibus, venis nigris; alis ad apicem infuscatis; pedibus testaceis, tarsis plus minusve fuscis.

Of a greyish colour, slightly ochraceous in front and at the sides, strongly punctured, with a feebly raised dorsal line and no elevated lines on each side; the head is black, closely marked with small yellowish, slightly raised patches, and there are dark markings on the metopidium; the horn of the pronotum is unicolorous, slightly reddish at the apex, and from its base start two broad black bands, which reach for about two-thirds of the distance between the humeral prominences (which are black externally and reddish beneath) and the apex of the pronotum; the margins are reddish and the reddish colour is continued in two bands on each side between the shoulders and the black bands before mentioned; these reddish bands almost meet just above the head; the tegmina are hyaline, with black veins, ochraceous at the base, and with the subcostal areas yellowish-red; the wings are infuscate at the apex, and the legs are testaceous, with the tarsi fuscous, the hinder pair, as before mentioned, being more slender and having longer tarsi than is usual in the Hoplophorinæ.

Long. 9, cum tegm. 13 millim.; lat. inter cornua $4\frac{1}{2}$ millim.

Hab. Mexico, Rinconada in Vera Cruz (*Schaus*).

One male specimen.

ACONOPHOROIDES, gen. nov.

Quoad formam *Aconophoræ* affinis, sed tarsis posterioribus minutissimis, lateribus pronoti carinatis et lateribus cornus fortiter porrecti multo-carinatis facile distinguendus.

This genus is formed to receive *A. gladiator*, Walk. (=*Thelia gladiator*, Walk.), and one or two allied species, which have been classed under *Aconophora*, but are much more closely related to *Potnia* and *Hoplophora*: in fact, the genus must be removed to the Hoplophorinæ. In form the genus resembles large broad specimens of *Aconophora*, but may be easily distinguished by the very small posterior tarsi (the intermediate and

anterior pairs being of considerable length), and by the strongly carinate sides of pronotum, and also by the sides of the pronotal horn being furnished with three or more carinæ, more or less perfect; in *Aconophora* the posterior tarsi, although not always as long as the intermediate and anterior pairs, are never minute, the pronotum is never carinate, except for the dorsal keel, and the sides of the pronotal horn have one more or less broad elevated line running from the base to the apex. In the venation of the tegmina the genus appears to be closely related to *Aconophora*.

Aconophoroides in general appearance appears to be most closely connected with *Enchotype*, Stål, as represented by *Enchotype* (*Potnia*) *fairmairei*, Guér., but it is distinguished from that genus by the wings having four apical cells instead of three, and by the plainly carinate sides and horn of the pronotum; in *Potnia* the formation of the pronotal horn is quite different.

1. **Aconophoroides gladiator.** (Tab. IV. figg. 11, 11 *a*.)

Thelia gladiator, Walk. List of Homopt. Ins. ii. p. 567 [1].
Aconophora lata, Walk. Ins. Saunders., Homopt. p. 69 [2]; Butl. Cist. Ent. ii. p. 352 [3].

Hab. PANAMA, Bugaba (*Champion*).—AMAZONS, Pará [1 3].

One female specimen from Chiriqui. I can see no reason for following Mr. Butler in altering Walker's original name and substituting his later name for a synonymous species, because Stål has named a species of *Aconophora A. gladiata*, especially as *A. gladiata* appears to belong to the *A. pallescens* group of the genus; at all events no alteration need now be made, as the insect is removed to a different genus altogether.

Subfam. *DARNINÆ*.

The genera comprised in this subfamily are somewhat heterogeneous, and several of them differ very much in general facies; in distinguishing them some writers have made use of one or two characters which are often misleading, especially that of the relative distance of the ocelli from the eye and from one another: in certain groups, *e. g.* of the Centrotinæ, it is a very valuable character, for in the Centrotinæ various genera have the ocelli situated almost on the margins of the eye, but in the Darninæ the relative difference of distance is very seldom great enough to be noticeable. The general character of the venation is most important, but Stål appears to be not quite right in all cases as to the relative number of the discoidal areas; I have therefore in the following table made as little use as possible of the latter character, and have entirely omitted the characters drawn from the ocelli; in nearly all the genera the areas of the tegmina are more or less elongate, oblong, and parallel-sided, and in no case are any of the apical areas petiolate.

I. Tegmina not more than half as long again as the wings; pronotum not nodose or spined.

1. Pronotum covering at least half, and, as a rule, more than half the corium, reaching just to apex of tegmina, and sometimes exceeding it.

A. Humeral angle of pronotum strongly produced, auriculate; head about as broad as long . . . . . *Aspona*, Stål.

B. Humeral angle of pronotum not or very slightly and obtusely produced; head very short, much broader than long.

*a**. Tegmina with three veins starting from, or close to, the base of corium.

a†. Pronotum convex, not carinate.

a‡. At least one half of the tegmina exposed, the exposed portion being wider towards apex . . . . . *Darnis*, F.

b‡. At most one third of the tegmina exposed, the exposed part being of even width . . . . . *Hebeticoides*, gen. nov.

b†. Pronotum compressed, with the dorsal ridge carinate . *Tropidarnis*, gen. nov.

*b**. Tegmina with two veins starting from the base of corium, furcate at about the middle of the latter and at equal distances from the base . . . . . *Stictopelta*, Stål.

2. Tegmina almost entirely free.

A. Pronotum with a longer or shorter porrect frontal horn (rarely reduced to an obtuse angle), without lateral horns; humeral angles slightly and obtusely prominent; areas of tegmina oblong, narrow and elongate . . . . . *Aconophora*, Fairm.

B. Pronotum with lateral horns or projections above the humeral angles, which latter are scarcely, if at all, produced.

a. Areas of tegmina oblong, narrow, and more or less elongate; two discoidal areas nearly always present, in which case they are of equal size; if one only is present it is always elongate and narrow.

*a**. Pronotum, if viewed from above, very strongly inflated in front, and abruptly produced behind into a long lanceolate point . . . . . *Alcmeone*, Stål.

*b**. Pronotum, if viewed from above, not strongly inflated in front, and gradually narrowed into an elongate, but blunter process behind.

a†. Metopidium highly elevated and strongly declivous, almost or quite perpendicular; form of pronotum differing in the sexes; form more robust . . . . *Hyphinoë*, Stål.

b†. Metopidium much less elevated, convex, and very gradually declivous; form smaller and more slender. *Tomogonia*, Stål.

b. Areas of tegmina differing much in size, not elongate oblong; one very large and one much smaller discoidal area present; horns of pronotum strong and recurved . . . *Ictaranthe*, gen. nov.

c. Tegmina almost entirely exposed, with the areas regular and oblong, but less elongate; one small subtriangular discoidal area present; third basal area strongly petiolate; facies of a small *Ceresa* . . . . . *Nassunia*, Stål.

C. Pronotum without frontal or lateral horns, and with the humeral angles at most slightly prominent.

a. Pronotum strongly compresso-elevate, cymbiform . . . . *Cymbomorpha*, Stål.

b. Pronotum not compresso-elevate.

*a**. Tegmina not coriaceous.

a†. Areas of tegmina irregular, veins of apical areas strongly curved, dorsum sinuate . . . . . *Dysyncritus*, gen. nov.

b†. Areas of tegmina regular, veins of apical areas not or very slightly curved; dorsum even . . . . . *Darnoides*, Fairm.

*b**. Tegmina externally in part coriaceous; facies of a small *Tragopa* . . . . . *Scaphula*, Fairm.

II. Tegmina twice as long as wings; pronotum nodose and spined . . *Heteronotus*, Lap.

ASPONA.

Aspona, Stål, Kongl. Sv. Vet.-Ak. Handl. iii. 2 (Bidrag till Rio Janeiro-Trakt. Hemipt.-Fauna, ii.), p. 29 (1860).

The type-forms of this genus are very peculiar insects on account of their broad form, scabrous appearance, and the very large and distinct impressions on their surface. According to Stål, the tegmina have only one discoidal area, but in the first species described below two are present, and the character is evidently variable.

In our collection there are specimens of three species, one of which belongs to the typical form, and the second is intermediate and passes on to the third, which any one would describe as a new genus without the least hesitation, were it not for the second; after considerable doubt I have come to the conclusion that it is best to class them together under *Aspona* until more is known regarding the group, which seems to be a very scarce one. *Tragopa aspera*, of Walker's Cat. Homopt. Ins., Suppl. p. 151, is a small *Aspona*, allied to *A. bullata*, Stål. The genus is allied to *Hygris*.

1. **Aspona turgescens**, sp. n. (Tab. IV. figg. 12, 12 *a–c*.)

Oblonga, lata, robusta, fusco-ferruginea indistincte testaceo-variegata; capite æque longo ac lato, ferrugineo, dense punctato; pronoto rugoso, humeris prominulis, auriculatis, ferrugineis, fortiter et dense rugose punctato, linea centrali aliisque quibusdam utrinque irregularibus elevatis, ad medium profunde, iterumque levius postice, impresso, lateribus fere usque ad apicem parallelis, deinde in apicem obtusum abrupte contractis; tegminibus hyalinis, venis crassis, piceis, margine exteriori apicem versus fusco, ad basin ferrugineo, opaco, punctato; pedibus testaceis, tarsis infuscatis.

Oblong, subquadrate, with the sides of the pronotum parallel until near the apex, and then abruptly narrowed to a blunt point; head as long as broad, thickly punctured; pronotum scabrous and rugose, with irregular raised lines, fusco-ferruginous, indistinctly variegated, especially on these lines, with testaceous colour, very strongly impressed transversely at the middle, and again behind the middle, and much depressed before the apex; tegmina hyaline, slightly infuscate on their exterior margin, the basal portion of which is punctate

and ferruginous; legs testaceous, with the tarsi and more or less of the apex of the tibiæ fuscous; the colour, however, of the insect appears to be variable.

Long. $7\frac{1}{2}$ millim.; lat. inter cornua 5 millim.

Hab. MEXICO, Orizaba (*Bilimek, in Mus. Vind. Cæs.*); GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

A specimen from Cubilguitz is figured.

2. **Aspona intermedia,** sp. n. (Tab. IV. figg. 13, 13 *a–c.*)

Præcedenti affinis, sed lateribus pronoti parallelis usque ad mox pone medium, deinde sensim in apicem angustatis; capite testaceo; pronoto sat nitido, minus scabro, fortiter subrugose punctato, linea centrali lineisque quibusdam utrinque sat regularibus elevatis, virescenti flavo-testaceo variegato, humeris prominulis, auritis, nigris, dorso utrinque ad medium late leviter impresso; tegminibus hyalinis ad basin extremam nigro-testaceoque variegatis, apice fusco, venis interne fuscis, ad marginem exteriorem testaceis; pedibus testaceis, femoribus ad partem infuscatis.

Allied to the preceding, from which it may easily be known by its form and less scabrous sculpture; head testaceous, finely punctured; pronotum greenish, variegated with yellow or orange-testaceous, with the shoulders auriculate and deep black, sides parallel until a little behind middle, from whence they are gradually narrowed to the apex, dorsum broadly and indistinctly depressed at about the middle, punctuation strong and subrugose in moderately even rows, separated by somewhat irregular raised lines; tegmina hyaline, with the interior veins pitchy, and those at the margin yellow-testaceous, the extreme base opaque, variegated with black and testaceous; legs testaceous, with the femora partly infuscate.

Long. 7 millim.; lat. inter cornua 5 millim.

Hab. PANAMA, Bugaba (*Champion*).

3. **Aspona cuneata,** sp. n. (Tab. IV. figg. 14, 14 *a*, *b*.)

Præcedenti affinis, sed pronoti lateribus ab humeris usque ad apicem sensim angustatis, dorso æquali, vix impresso, convexo, ordinibusque punctorum, interstitiisque pluribus et magis regularibus instructo; capite testaceo, pronoto virescenti, dorso flavo-variegato, maculâque magnâ albidâ utrinque ad marginem; metopidio convexo, humeris auriculatis, ferrugineis, apice postico sat acuto, flavo; tegminibus hyalinis, venis totis externis flavo-testaceis, ceteris brunneis; pedibus testaceis.

Allied to the preceding, from which it may easily be distinguished by its form, the sides of the pronotum being gradually narrowed from the shoulders to the apex, and by the more regular rows of punctures and less rugose interstices, which are considerably more in number; the colour is greenish, with the dorsum variegated with orange-yellow, and with a long and large whitish or yellowish-white spot on each side touching the margin; tegmina hyaline, with the external veins reddish-yellow, and the rest pitchy; legs testaceous. Only one discoidal area is present.

Long. 9 millim.; lat. inter cornua $5\frac{3}{4}$ millim.

Hab. PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

DARNIS.

Darnis, Fabricius, Syst. Rhyng. p. 25 (1803); Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 30 (1869); Butler, Cist. Ent. ii. p. 337.

This genus, as here restricted, contains about half a dozen species from Central or Tropical South America. They may be distinguished by having the greater part of the tegmina uncovered by the pronotum towards the apex, and also by the venation of the

tegmina, which have three veins (one radial and two ulnar) proceeding from the base, and two discoidal areas, of which the exterior is shorter than the interior. The ocelli are situated nearer to each other than to the eyes. The pronotum is furnished on each side with a yellow band, which extends from opposite the eyes to within a short distance of the apex without interruption; the apex, moreover, is more acute and curved over the apex of the tegmina.

1. **Darnis lateralis.**

Darnis lateralis, Fabr. Syst. Rhyng. p. 27[1]; Butl. Cist. Ent. ii. p. 337[2].

Hab. MEXICO, Cuernavaca (*Bilimek, in Mus. Vind. Cæs.*).—SOUTH AMERICA[1], Cayenne, Brazil[2].

2. **Darnis latior,** sp. n. (Tab. IV. figg. 16, 16 *a–c.*)

D. laterali affinis, sed major et latior, limbo laterali flavo, pronoti ad medium multo latiori, et pronoto ipso pone oculos magis elevato et rotundato.

Allied to the preceding, but larger and broader, and with the disc of the pronotum more raised and rounded; the colour is dark brownish-black or black, the lateral margin very broadly yellow, the yellow colour showing a greenish tinge and occasionally occupying the greater part of the hinder portion of the pronotum, and leaving only a strip of dark colour in the centre; the head has a yellow spot in the centre; the legs are yellow, with the femora, except the apex, and the apex of the tibiæ dark, and the tarsi fuscous.

Long. 10 millim.; lat. max. 5 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Two specimens.

3. **Darnis partita.** (Tab. IV. figg. 15, 15 *a–c.*)

Darnis partita, Walk. Ins. Saunders., Homopt. p. 75[1].

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—AMAZONS[1].

This is a very pretty species, black, with three yellow bands which join the yellow side border; it superficially resembles *Ochrolomia tricincta*, Stål, but in that species the anterior band is wanting. Walker appears to have described the species from a somewhat immature specimen. An example from Bugaba is figured.

HEBETICOIDES, gen. nov.

Quoad formam et faciem *Hebeticæ* (Stål, Hem. Fabr. ii. p. 32) affinis, sed tegminibus venis tribus a bas corii emissis instructis; quoad venas tegminum *Leptostictæ* maxime congruens, sed vix huic generi propter formam adjungendus.

Intermediate between *Leptosticta* and *Hebetica*, having the form of the latter, and the general venation of the tegmina as in the former, except that the relation of the discoidal areas to one another in size and shape is variable.

On examining two specimens which I had without doubt assigned to *Hebetica*, I found that they had three veins starting from the base of the corium as in *Leptosticta*. I afterwards found a third specimen among some undescribed Membracidæ from the Stockholm Museum which presented much the same characteristics of venation; as Stål forms his genera chiefly on this character, the only alternative appears to be either to include them under *Leptosticta* or place them in a new genus. If facies is to be regarded at all they cannot be separated far from *Hebetica*, and cannot well be associated with *Leptosticta*; I have therefore adopted the latter alternative, though with some reserve, for although the veining of the corium as regards the two or three veins, as the case may be, which start from the base seems constant, yet it must be admitted that there is considerable variation in other points: the discoidal areas, for instance, are sometimes of different relative sizes, and through the absence of a transverse vein one only may be present where there ought normally to be two; the tegmina of the same insect, moreover, are often different in slight points. At the same time, in the absence of more definite characters, the venation is very valuable as a means of distinction; and Stål's genera cannot be set aside, at all events in the present state of our knowledge and without the examination of much more material than we at present possess. It may be well perhaps here to quote the characters assigned by Stål to *Hebetica* and *Leptosticta* respectively as regards venation:—

"Corio venis longitudinalibus duabus, venâ ulnari paullo ante medium, venâ radiali in medio vel pone medium corii furcatis, areâ discoidali exteriori minutissimâ, interiore magnâ elongatâ; capite thoraceque puberulis; tegminibus ultra latera thoracis nonnihil prominnlis. Subg. *Hebetica*, Stål (types *Darnis convoluta*, Ol., *D. limacodes*, Burm.)."

"Corio venis longitudinalibus tribus, radiali et duabus ulnaribus, e basi emissis, ulnaribus basin versus contiguis, areis discoidalibus duabus, interiore nonnihil ante medium corii extensâ, basi venulâ transversâ, inter venas ulnares ductâ, terminatâ, exteriore in furcâ venæ radialis, pone medium corii sitâ, areâ interiore breviore. Subg. *Leptosticta*, Stål (type *D. flaviceps*, Burm.)."

Leptosticta flaviceps bears a superficial resemblance to *Darnis lateralis*. In the Vienna Museum there is an insect of Signoret's labelled "*limbata*" from Mexico. *Darnis limbata* is quoted by Butler (Cist. Ent. ii. p. 341) as a synonym of *L. flaviceps*; but it is evident, on examination of the tegmina, that the insect here referred to is *Stictopelta affinis*.

1. **Hebeticoides acutus**, sp. n. (Tab. IV. figg. 17, 17 *a–d*, ♂.)

Latior, nigro-purpureus; capite metopidioque supra frontem flavis, limboque laterali pronoti virescenti-flavo plus minusve indistincto; ocellis approximatis; pronoto humeris a fronte viso deorsum prominulis, distinctius punctato, ad apicem valde angustato, apice ipso acutissimo; tegminibus fusco-purpureis, intus dilutioribus; pedibus flavo-testaceis; abdomine plerumque nigro, marginibus segmentorum flavis.

A rather large species, broad in front and narrowed to a very sharp point behind, of a purplish-black colour, with the head and the part just above it yellow, and the pronotum with a broad greenish-yellow margin, extending from behind the shoulders to some little distance before the apex; punctuation, except of the head and metopidium, distinct and comparatively strong; tegmina of a purplish-fuscous colour, browner

and more transparent towards their inner border; legs clear testaceous-yellow, with the upperside of the femora only dark; margins of the segments of the abdomen yellow.

Long. 13 millim.; lat. int. hum. 7 millim.

Hab. GUATEMALA, Panima in Vera Paz (*Champion*).

One male specimen. This species is very like *Darnis convoluta*, but may be easily distinguished by its broader form and more prominent shoulders, which are differently shaped, as well as by its glabrous surface and rather stronger punctuation.

2. **Hebeticoides confusus,** sp. n. (Tab. IV. figg. 18, 18 *a*, *b*, ♂.)

Præcedenti affinis, sed multo minor, humeris minus prominentibus; capite pronotoque brunneo, metopidio nigro, lateribus ad marginem dilutioribus, pronoto vitta laterali nullâ, distincte densius punctato; tegminibus brunneis, intus hyalinis; pedibus brunneo-testaceis.

Much smaller than the preceding, with the shoulders less prominent and more closely punctured, and with scattered hairs towards the apex of the pronotum; the head and pronotum are brown, and the metopidium black, the colours being indistinct; the sides are lighter, but there is no marked lateral band; tegmina brown, internally hyaline; legs testaceous-brown, with the upper part of the femora dark; margins of the segments of the abdomen yellow.

Long. 9 millim.; lat. int. hum. $4\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

One male specimen. This species has the minute external discoidal area referred to by Stål as a character of *Hebetica*, and in this respect differs from the preceding species; but it has the three veins proceeding from the base, and the tegmina so far exposed beyond the pronotum that two apical areas are uncovered.

3. **Hebeticoides denticulatus,** sp. n.

Elongatus sat latus, dilute testaceus; capite lato, ocellis approximatis, anguste nigro cinctis; metopidio a latere viso oblique rotundato; pronoto sat fortiter punctato, lineâ mediâ dorsali lævi, humeris vix prominulis, lateribus sensim ad apicem angustatis, apice extremo acuto, nigro, vix reflexo; tegminibus hyalinis, venis exterioribus testaceis, interioribus brunneis; pedibus testaceis, femoribus subtus et tibiis distincte nigro-denticulatis; pectore nigro, abdomine plerumque testaceo.

A long and moderately broad species, with the sides more parallel and more gradually rounded to the apex than in either of the two preceding species; head broad, eyes large; pronotum with the shoulders scarcely at all prominent, rather strongly punctured, dull, with a smooth central line, gradually narrowed to the apex, which is acute and very slightly reflexed; tegmina hyaline, reaching very slightly beyond the apex, with the interior veins darker than the exterior, with two discoidal areas, the exterior being the longer, and the interior the broader; rather more than one-third of the tegmina is exposed beyond the sides of the pronotum; legs testaceous, with the femora and tibiæ furnished with little black teeth set in rows; underside black, with the abdomen mostly testaceous.

Long. $11\frac{1}{2}$ millim.; lat. $4\frac{3}{4}$ millim.

Hab. MEXICO (*Boucard, in Mus. Holm.*).

One female specimen in the Stockholm Museum collection.

The strong denticulation of the legs, especially of the femora, will serve to distinguish this species, which may perhaps form the type of a separate genus.

STICTOPELTA.

Stictopelta, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 32 (1869); Butler, Cist. Ent. ii. p. 339.
Cryptoptera, Stål, loc. cit. p. 32.

This genus, as here constituted, contains upwards of twenty species from Central or Tropical South America. I feel, however, very doubtful as regards several of these, for they run in many cases into one another, and it will be necessary to examine a much larger amount of material than is at present available before the constitution of the genus can be finally settled; the venation of the tegmina is very distinct, two veins only proceeding from the base, and being forked near the middle at about equal distances from the base. I have included the genus *Cryptoptera*, Stål, under *Stictopelta*, as it only appears to differ in its elongate form, and certain species of *Stictopelta* lead up to it.

1. **Stictopelta affinis.**

Darnis affinis, Guér. Icon. Règne Anim., Ins. p. 364, t. 59. fig. 2 (1829–44)[1].
Stictopelta affinis, Butl. Cist. Ent. ii. p. 339[2].
Darnis transversalis, Walk. List of Homopt. Ins., Suppl. p. 148[3].

Hab. Mexico[1] (*Sallé*[2 3]), Temax in North Yucatan (*Gaumer*).

We have received a single specimen of this species from Yucatan.

2. **Stictopelta bipunctata.** (Tab. IV. figg. 19, 19 *a*, *b*.)

Darnis bipunctata, Burm. Rev. Ent. Silb. iv. p. 171[1].
Stictopelta bipunctata, Butl. Cist. Ent. ii. p. 340[2].
Darnis adusta, Burm. Rev. Ent. Silb. iv. p. 170[3].
Stictopelta adusta, Butl. Cist. Ent. ii. p. 340[4].

Hab. Mexico[1 2 3] (*Mus. Holm.*), Amula in Guerrero (*H. H. Smith*), Cuernavaca (*Bilimek, in Mus. Vind. Cæs.*), Oaxaca (*Sallé, in Mus. Brit.*[4]).

S. adusta is a light or immature greenish-brown variety of the type-form, which is of a rich shining brown colour, with a short marginal orange patch on each side behind the shoulders. We have received one specimen of this species from Amula, which we figure.

3. **Stictopelta strigifrons.**

Darnis strigifrons, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 481[1].
Stictopelta strigifrons, Butl. Cist. Ent. ii. p. 340[2].

Hab. Mexico[1 2].

I have not seen a specimen of this insect, which is described by Fairmaire as "Tota

flava, nitida, maculâ subhumerali obscurâ.—Of a shining yellow colour, finely punctured, with an elongate dark patch behind the shoulders; underside of a dirty ferruginous colour; legs with a black line.—Coll. Spinola."

4. Stictopelta zonifera.

Ochrolomia zonifera, Butl. Cist. Ent. ii. p. 339, t. 7. fig. 2[1].

Hab. Mexico [1] (*Boucard, in Mus. Holm.*).

The Stockholm Museum specimen is dark violaceous-brown, with light testaceous markings; the type in the British Museum is of a light testaceous-brown colour, with lighter markings, and looks quite different at first sight; on close examination, however, I can find no structural difference, and I have since found that the variation of colour is not uncommon in certain violaceous-brown species. The species is not represented in our collection.

Butler places this species under *Ochrolomia*, but the venation is that of *Stictopelta*, and besides this only a very small portion of the tegmina is visible below the pronotum, whereas Stål's chief character for the genus is that half the tegmina are exposed (*v.* Hem. Fabr. ii. p. 32).

5. Stictopelta varians, sp. n. (Tab. V. figg. 1, 1 *a–c.*)

Brevis, latior; capite, marginibus nigris exceptis, testaceo; pronoto violaceo-brunneo, colore nigro cincto, limbo laterali lato albido, subtiliter punctato; metopidio margine extremo testaceo, humeris obtuse prominulis; tegminibus ultra apicem pronoti extensis, semi-intectis, tegminibus hyalinis ad apicem brunneis; pedibus testaceis, plus minusve nigro-notatis.

Var. Ochracea vel testacea, limbis lateralibus albidis supra distinctius nigro cinctis.

Short and rather broad, with the head, except the margins, testaceous; pronotum of a violaceous-brown colour, with the part thus coloured surrounded by a more or less broad dark line, which is often not distinctly marked, on each side at the margins there is a broad elongate whitish band or lateral patch extending from behind the shoulders and ceasing at some little distance before the apex; the metopidium has the extreme margin testaceous above the head; the pronotum is finely punctured, and is obtuse at the apex, and the tegmina extend beyond the apex, and have at least half their area exposed towards the tips, this character, however, being variable in different specimens; legs testaceous, more or less marked with black.

Var. Ochraceous or light testaceous brown, with the whitish side patches banded above by a distinct dark line, which sometimes extends to the apex; tegmina with the extreme tip fuscous.

Long. 8–9 millim.; lat. int. hum. 4–4½ millim.

Hab. Mexico, Ventanas in Durango 2000 feet (*Forrer*), Jalisco (*Schumann*).

Two males of the type-form, and one male and three females of the variety, from Ventanas; and one specimen, without abdomen, from Jalisco.

The variety, at first sight, looks very distinct; it may possibly be an immature form, but the markings are very plain. We figure a typical example from Ventanas.

6. **Stictopelta punctata,** sp. n. (Tab. V. figg. 2, 2 *a*, *b*.)

Præcedenti affinis, sed paullo major; capite testaceo, pronoto violaceo-brunneo, metopidio sparsim testaceo, limbo albido irregulari ab oculis usque ad tertiam partem ante apicem extenso, et maculâ albidâ laterali utrinque prope apicem instructo; pronoto fortius regulariter punctato, haud rugoso, apice obtuso; tegminibus longius ultra apicem pronoti extensis, ad apicem fuscis; pedibus plerumque testaceis.

A little larger than the preceding species, with the pronotum of a violaceous-brown colour, the metopidium being mottled with whitish-testaceous; just above the head, which is whitish-testaceous, there are two narrow transverse black bands, which bend at an obtuse angle and join the margin just above the eyes; there is an irregular whitish patch at each side, extending from the eyes and ceasing at some distance before the apex, and between this and the apex, which is blunt, there is an irregular lateral whitish spot; the chief character of the species, however, is its strong and regular punctuation, which separates it from all the other members of the genus; the tegmina extend to some distance beyond the apex, and are more than half exposed towards the tips; legs for the most part of a light testaceous colour.

Long. 8, cum tegm. 9 millim.; lat. int. hum. $4\frac{1}{2}$ millim.

Hab. MEXICO, Mescala in Guerrero (*H. H. Smith*).

One female specimen. This and the preceding species have the tegmina as much exposed towards the apex as in the species of *Darnis*, i. sp., and they belong to Stål's subgenus *Ochrolomia*. The venation of the wings is as in *Stictopelta*.

7. **Stictopelta assimilis,** sp. n.

S. varianti quoad colorem et staturam simillima, sed pronoto ad apicem acutiore apicem tegminum tegente, et tegminibus pronoto fere totis tectis, facillime distinguenda.

In size and colour very closely allied to *S. varians*, but easily distinguished by having the pronotum more acute at the apex and entirely covering the apex of the tegmina, and also by the fact that the tegmina at the sides are almost entirely covered by the pronotum, which is a little more shining and has the humeral prominences slightly more marked.

Long. 8 millim.; lat. int. hum. 4 millim.

Hab. GUATEMALA, Dueñas (*Champion*).

Two male specimens; these are extremely like *S. varians*, but, according to Stål's characters, they belong to separate genera.

8. **Stictopelta hinnuleus,** sp. n.

Major, sat robusta, testaceo-brunnea, limbo albido pronoti ab humeris usque ad apicem extenso; capite strigoso; pronoto modice punctato, ad apicem acuminatum sensim angustato; tegminibus hyalinis, venis testaceis, tertiâ parte intectâ; pedibus testaceis.

Rather a large species, of a clear testaceous or light olivaceous-brown colour, with a narrow whitish border extending from behind the shoulders to the apex, which is acuminate; the head is longitudinally strigose, and the pronotum is distinctly, and in some parts slightly subrugosely, punctured, and extends beyond the apex of the tegmina, of which about a third part or less is left uncovered; legs testaceous; underside rather dark.

Long. 11 millim.; lat. int. hum. $5\frac{1}{2}$ millim.

Hab. MEXICO, Cuernavaca and Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

Two female specimens, both in the Vienna Museum. This species appears to be

very distinct; at first sight it looks like a brightly-coloured form of a darker insect, but this is probably not the case. The specimens are not immature.

9. **Stictopelta lineifrons,** sp. n. (Tab. V. figg. 3, 3 *a*, *b*.)

Parva, elongata, griseo-virescens, lineis quibusdam brunneis transversalibus plus minusve interruptis trans caput metopidiumque ductis, et limbo laterali pronoti ab humeris usque ad apicem albescenti, colore nonnunquam indistincto; pronoto angustiori, subtiliter punctato, ad apicem sensim acuminato, humeris obtuse prominulis; tegminibus hyalinis ad basin testaceis, ad apicem fuscis, venis brunneis vel nigro-brunneis; pedibus testaceis.

A small narrow species, of a greyish-green colour, with the head and metopidium lighter, often yellowish, with four or five dark, narrow, transverse, more or less irregular bands, and with the border of the pronotum from behind the shoulders to the apex whitish or greenish-white; the colour is sometimes very distinct and sometimes almost merged in that of the pronotum; the pronotum is elongate and gradually narrowed to the apex, finely punctured and very finely alutaceous between the punctures; the tegmina are hyaline, somewhat fuscous at the apex, with the veins blackish-brown or brown, and the marginal vein towards the base black; legs testaceous; segments of the abdomen with the apical half testaceous.

Long. $6\frac{1}{2}$–$7\frac{1}{2}$ millim., lat. int. hum. $3\frac{1}{2}$ millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

Thirteen specimens. This is one of the most distinct species of the genus that I have seen; the venation of the wings is that of a typical *Stictopelta*.

10. **Stictopelta incerta.**

Darnis incerta, Walk. List of Homopt. Ins., Suppl. p. 149 [1].

Ochrolomia incerta, Butl. Cist. Ent. ii. p. 338 [2].

Hab. Mexico (*Sallé* [1] [2]), Atoyac in Vera Cruz (*Schumann*), Temax in North Yucatan (*Gaumer*).

11. **Stictopelta nigrifrons,** sp. n. (Tab. V. figg. 4, 4 *a*, *b*.)

Brevis, latior, testacea, tertiâ vel quartâ parte anteriori pronoti, maculis quibusdam testaceis supra caput exceptis, nigrâ; pronoto rotundato, plus minusve distincte punctato, humeris obtuse prominulis, apice haud abrupte acuminato, interdum fere rotundato; corpore subtus et pedibus testaceis. Præcedenti affinis, sed colore facillime distinguenda.

Very like the preceding, but on an average smaller and easily distinguished by its colour, the front part of the pronotum being black—the colour being sharply defined and usually reaching for about a third part of the whole surface from the front of the metopidium; sometimes the metopidium only is black, and there are always a few larger or smaller testaceous markings just above the head, which, with all the rest of the insect, is testaceous.

Long. $6\frac{1}{2}$–7 millim.; lat. int. hum. 4 millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

Four male specimens. *S. nigrifrons* may possibly be a variety of the male of the preceding species, but I have not noticed any other colour-varieties of the same sort in the group.

12. **Stictopelta indeterminata.** (Tab. V. figg. 5, 5 *a*, *b*.)

Darnis indeterminata, Walk. List of Homopt. Ins., Suppl. p. 148 [1].

Hab. MEXICO (*Bilimek, in Mus. Vind. Cæs.*), Presidio de Mazatlan (*Forrer*), Jalisco (*Schumann*), Amula and Tepetlapa in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Teleman in Vera Paz (*Champion*); PANAMA, Bugaba and Caldera in Chiriqui (*Champion*).—AMAZONS, Santarem [1].

Our collection contains a larger series of the insect which I refer to this species than of any other in the group. In size and colour these specimens are very variable, and might well be described as several separate species, but they run one into another. Some are of a decided greenish colour, and others clear testaceous, while the colouring of the legs and the general form differ considerably in specimens from the same locality: thus, for instance, there are four specimens from Atoyac, Vera Cruz, from which two and perhaps three species might be formed on differences that appear to have been considered specific in the group; the whole of the specimens, however, appear to agree in having the angles at the sides of the prothorax just behind the shoulders very obtuse, a character which separates them from the two preceding species.

An example from Jalisco is figured.

13. **Stictopelta fraterna.**

Stictopelta fraterna, Butl. Cist. Ent. ii. p. 340 [1].

Hab. MEXICO (*Bilimek, in Mus. Vind. Cæs.*), Oaxaca (*Sallé* [1]).—PERU [1].

I believe this to be only a small form of the preceding, and cannot satisfactorily identify any of the specimens in our collection with it, although several are extremely near it; they are, however, connected with the larger specimens of *S. indeterminata* by intermediate forms. There is one example in the Vienna Museum collection which appears to belong to it; the chief difference lies in the shoulders being less prominent. The other characters, especially those of the colour of the legs and apex of prothorax, are quite untrustworthy, as may be seen by examining the series of *S. indeterminata* in our collection.

There are four large and rather strongly punctured specimens (12 millim. in length) in the Vienna collection, which are either *S. indeterminata* or very closely allied to it, and a very small specimen (7 millim. in length) in our series (from Puebla, Mexico), closely allied to *S. fraterna*, which may both belong to new species; in the face, however, of the acknowledged difficulty of this testaceous group of *Stictopelta*, which is expressed by the names given to the species by different authors, I prefer not to multiply species in the present state of our knowledge.

14. **Stictopelta acutula.** (Tab. V. figg. 6, 6 *a*, *b*.)

Darnis acutula, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 481 [1].
Cryptoptera acutula, Butl. Cist. Ent. ii. p. 342 [2].
Darnis brevis, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 483 [3].
Cryptoptera brevis, Butl. Cist. Ent. ii. p. 342 [4].

Hab. Mexico [3] (*Sallé* [4]); Guatemala, Chiacam in Vera Paz, Cerro Zunil, Zapote (*Champion*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—South America [1], Brazil [2].

We have received a single specimen from Cerro Zunil which appears to belong to *D. brevis*, Fairm.; this insect is shorter and has a somewhat blunter apex to the pronotum than *S. acutula*, but they cannot well be separated. We figure an example of *S. acutula* from Chiacam.

N.B.—I have before me Signoret's type of *Darnis prasina* (from Venezuela), on which Fairmaire described the species; it is very like *Cryptoptera olivacea*, Stål (=*Darnis olivacea*, Fabr.), and perhaps ought to be referred to that species.

TROPIDARNIS, gen. nov.

Generibus præcedentibus affinis, sed dorso elevato, distincte et acute carinato facillime distinguendus; tegminibus tertiâ parte intectâ, vix ad apicem pronoti extensis, ad basin externe opacis et fortiter punctatis, corio tribus venis e basi emissis et areis discoidalibus duabus, interiore apicem versus dilatato; pedibus teretioribus.

Allied to the other genera of the family, but easily distinguished by having the back of the pronotum raised and acutely keeled; the tegmina scarcely reach the apex of the pronotum, and have about one-third of their breadth exposed beyond its sides; the base externally is opaque and strongly punctured; three veins proceed from the base of the corium, and are continued to the apex, as in *Darnis*, *Leptosticta*, and *Hebeticoides*; and there are two discoidal areas, of which the interior is the longest and is dilated at the apex, the exterior one starting at the dilated portion and continuing towards the apex; the legs are rather slender. In the specimen described there is an oblique depression on each side of the dorsal keel at about the middle, which meet or almost meet at the keel and form a very indistinct **V**-shaped mark.

1. **Tropidarnis tectigera,** sp. n. (Tab. V. figg. 7, 7 *a–c*.)

Virescens, capite testaceo; pronoto antice sat lato, humeris modice prominulis, ad apicem acutum sensim angustato, distincte et regulariter punctato, vix nitido, dorso elevato, a latere viso æqualiter declivi, carinâ sat nitidâ instructo; tegminibus hyalinis, vittâ longitudinali exteriori brunneâ; pedibus et corpore subtus fusco-testaceis.

Of a light greenish colour, with the head and the metopidium just above the head testaceous; pronotum, viewed from above, rather broad in front, with the sides slightly rounded and gradually narrowed to the apex, which is acute, and with a distinct shining keel, which is continued as a smooth line on the meto-

pidium until it almost meets the head; the punctuation is close and very distinct and regular; viewed from the side the pronotum is rounded in front and then evenly and gradually sloped to the apex; which just reaches the apex of the tegmina; the extreme lateral margins are testaceous, with a short dark mark in the centre; tegmina hyaline, with a broad fuscous band before the external margin; legs and underside dark testaceous, with indistinct fuscous markings.

Long. 9 millim.; lat. int. hum. $4\frac{1}{2}$ millim.

Hab. MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

One female specimen, which we figure.

2. **Tropidarnis acutior,** sp. n.

Præcedenti affinis, sed acutius carinata, utrinque declivior, supra visa angustiori, lateribus haud rotundatis, et apice longiori, a latere visa dorso magis elevato et abruptius ad apicem declivi; tegminibus externe ad apicem et ad basin brunneis; pronoto testaceo sed forsitan decolorato.

Very like the preceding, but with the keel more acute and the sides more abruptly sloping to the margins, which are very narrowly light testaceous; general colour testaceous, but perhaps faded. Viewed from above the form is narrower, with the shoulders rather more pronounced and the sides more sharply narrowed to the apex, which is longer and more acute; viewed from the side the centre of the back is more elevated, and, in consequence, more abruptly sloped to the apex; the dorsal **V**-shaped depression is also more distinct; the tegmina have the base and apex brown externally; legs and underside testaceous, more or less fuscous.

Long. 9 millim.; lat. int. hum. 4 millim.

Hab. MEXICO (*Boucard, in Mus. Holm.*).

One female specimen.

ACONOPHORA.

Aconophora, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 294 (1846); Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 34; Butler, Cist. Ent. ii. p. 346.

This genus contains a considerable number of species which appear to be confined to Central and Tropical South America; they may be known by having the pronotum armed with a long projecting horn or porrect process in front, which is very narrow and acute if viewed from above, but broad and rounded at the apex (which is often more or less dilated) if viewed from the sides; it is usually more or less elevated and forms a more or less obtuse angle with the dorsal line of the pronotum, but in some species is quite level with it; the areas of the tegmina are oblong. In size there is very great variation in the different species, and the colour also varies to a considerable extent; but at present the genus is in a state of inextricable confusion, and in every collection that I have seen there are different species mixed together under one name, or the same species under different names, or a considerable number of species altogether undetermined. Stål (*l. c. supra*) gives what professes to be a dichotomous table of the known species, which he mentions as "plurimas, difficilimas, inter se simillimas et secundum descriptiones auctorum haud certe determinandas"; but, in the first place, he does not mention anything like the number of species then known in his table, and, in the second place, his descriptions of most of them are meagre in the extreme, so that,

except in one or two cases, they are, if anything, a hindrance rather than a help. At the same time it is doubtful whether any satisfactory descriptions can be given for the determination of species, and the synonymic arrangement below adopted after a careful examination of a very large number of examples cannot be regarded as more than provisional, for there appears to be no particular distinguishing character that can be reliably adopted as a basis to work upon. I have endeavoured to find one in the male characters, but, although there appears to be a slight difference in certain species, yet it is so very slight, as far as I have seen, and so difficult to work out, that it is scarcely worth while to consider it. In certain species the males and females appear to differ considerably in the formation of the pronotal horn, and have hitherto been described as distinct.

In the Vienna Museum collection there are four specimens of what apparently is the larval or pupal state of a species belonging to the *A. pallescens* group; it is shaped like a small *Aconophora* in the perfect state, but has no tegmina, these being replaced by a long corneous piece on each side; the head and eyes are large and the latter are furnished on their inner side with a long thick tapering black seta.

1. **Aconophora mexicana.** (Tab. V. figg: 8, 8 *a*.)

Aconophora mexicana, Stål, Stett. ent. Zeit. 1864, p. 70 [1].

Hab. MEXICO (*Mus. Holm. & coll. Signoret* [1]), Vera Cruz (*Sallé*), Atoyac in Vera Cruz (*Schumann*), Dos Arroyos in Guerrero 1000 feet (*H. H. Smith*), Valladolid in Yucatan (*Gaumer*); GUATEMALA; PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA (*Mus. Roy. Belg.*).

This is a very distinct species, being clothed with yellowish shining pubescence, with the dorsal line and a broad line on each side of it smooth, which gives the insect a striped appearance. Mr. Butler (Cist. Ent. ii. p. 347) says of this species: "I think it very doubtful whether this is more than a variety of the preceding species" (*A. stabilis*); but Walker's type of *A. stabilis* is very different from the true *A. mexicana*, which does not appear to be in the British Museum collection at all, one or two other species, which certainly are closely allied to *A. stabilis*, being made to do duty for it. Through the kindness of Dr. Aurivillius I have been enabled to examine one of Stål's types.

We have received a considerable series of *A. mexicana* from Atoyac. A specimen from Volcan de Chiriqui is figured.

2. **Aconophora caliginosa.** (Tab. V. figg. 9, 9 *a*.)

Aconophora caliginosa, Walk. List of Homopt. Ins., Suppl. p. 135 [1].

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA (*Deby* [1]), Chacoj and Lanquin in Vera Paz, Coatepeque (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, David, San Feliz (*Champion*).

The large size and black colour will easily distinguish this species, which in outline and shape of pronotal horn much resembles *A. pubescens*. A specimen from Lanquin is figured.

3. **Aconophora viridescens.**

Aconophora viridescens, Walk. List of Homopt. Ins. ii. p. 538 [1]; Butl. Cist. Ent. ii. p. 351 [2].
Aconophora guttifera, Walk. loc. cit. p. 539 [3].

Hab. North America, East Florida [3].—Mexico (*Mus. Brit. ex coll. Saunders* [2]).

A. viridescens is not represented in our collection; it is described as a broad species, with a very short pronotal horn, and is, apparently, of about the same size as *A. marginata*. No locality was given by Walker [1] for *A. viridescens*.

4. **Aconophora pubescens.**

Aconophora pubescens, Walk. Ins. Saund., Homopt. p. 70 [1].
Aconophora spathata, Butl. Cist. Ent. ii. p. 347 [2].

Hab. Guatemala, Rio Maria Linda, San Gerónimo (*Champion*).—South America [1]; Brazil [2], Bahia (*Mus. Vind. Cæs.*).

Mr. Butler says that his *A. spathata* is most nearly allied to *A. pubescens*: the examples from Guatemala in our collection form a connecting-link between the two insects, and appear to show that they are really synonymous. The species is a rather large one, with the pronotal horn narrow and slender in comparison to its size. There are also four specimens in our collection, from Dos Arroyos, Guerrero (*H. H. Smith*), Atoyac, Vera Cruz (*Schumann*), and Panzos, Vera Paz (*Conradt*), which I have somewhat doubtfully referred to this species; they come too near it to be described as distinct in the present state of our knowledge of the genus.

5. **Aconophora laminata.**

Aconophora laminata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 294 [1].

Hab. Mexico (*coll. Spinola* [1]).

I have taken great pains to identify this species, but have failed to do so; in the collections I have examined there are no specimens standing under *A. laminata* which answer to Fairmaire's description, and other species, in some cases more than one, do duty for it. Fairmaire distinctly says that the horn is slender and the femora black, the general colour being testaceous-brown, and the total length 12 mm.; the specimens in Signoret's collection are evidently not rightly named, and the other specimens I have examined do not agree with the description. Stål in his table (Kongl. Sv. Vet.-Ak. Handl. viii. 1, p. 35) describes the insect as "corpore sordide flavo-testaceo vel olivaceo-testaceo, capite nigro, apice inter oculos et frontem flavescente limbato,"

which, in the first place, differs from Fairmaire's description, and, in the second place, might be applied to several other species.

6. **Aconophora nigricornis,** sp. n. (Tab. V. figg. 10, 10 *a*.)

Olivaceo-testacea, pronoto dense et subtiliter punctato, parcius albido-pubescenti, cornu et apice pronoti nigro, illo lato, sat longo, suberecto, carinâ dorsali nigro-brunneâ; capite nigro plus minusve flavo-limbato; tegminibus hyalinis, venis nigro-brunneis; pedibus totis testaceis.

Of an olivaceous-testaceous colour (testaceous in slightly faded specimens), with the pronotum thickly and finely punctured, and, when fresh, apparently sparingly clothed with whitish fugitive pubescence, with the horn broad and porrect and entirely black or black-brown; the apex also of the pronotum is black, and the narrow raised dorsal line black-brown; the head is black with yellow border, or yellow with the centre black; the tegmina are hyaline, with the veins dark and with a slight shade of fuscous in one or two specimens towards the apex; legs entirely testaceous; underside partly dark.

Long. 12 millim.; ab humeris ad apicem cornus vix 6 millim.; lat. int. hum. 4 millim.

Hab. MEXICO (*coll. Signoret, in Mus. Vind. Cæs.*); GUATEMALA, Chiacam, and San Gerónimo in Vera Paz (*Champion*).

We figure a specimen from San Gerónimo.

7. **Aconophora pinguis,** sp. n. (Tab. V. figg. 11, 11 *a*.)

Piceo-castanea, pronoto crassiori, subtiliter subrugosius punctato, sparsim pubescenti, cornu parvo tenui, vix erecto, dorso leviter rotundato, apice supra viso breviori; tegminibus fuscis, apicem versus hyalinis; corpore subtus piceo; pedibus totis ferrugineis vel fusco-testaceis.

Mas: cornu breviori et crassiori.

Femina: cornu longiori et graciliori.

Of a pitchy-castaneous colour, with the pronotum rather large, slightly raised and rounded on the back, finely and subrugosely punctured, the punctuation, however, being somewhat variable, and with a small horn, which is longer and more slender in the female than in the male, but is much smaller in both sexes in proportion to the size of the insect than is usually the case in the genus; tegmina fuscous, hyaline towards the apex, sometimes with the anterior third only hyaline; legs entirely ferruginous or fusco-testaceous; underside pitchy.

♂. Long. 9 millim.; ab humeris ad apicem cornus 3 millim.; lat. int. hum. 3 millim.

♀. Long. 10 millim.; ab humeris ad apicem cornus 4 millim.; lat. int. hum. $3\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

The specimens from the Volcan de Chiriqui are slightly different from the others in punctuation and in the colour of the tegmina, but all appear to belong to the same species. *A. pinguis* appears to be allied to *A. tenuicornis* from the Amazons Valley.

There is a single female specimen from Temax, Yucatan (*Gaumer*), in our collection, which is allied to this species, but differs in one or two points, being more finely punctured, with the central carina of the horn more marked, &c.; it is not quite perfect and it could not well be described as new on this one example.

A specimen from Bugaba is figured.

8. **Aconophora compressa.**

Aconophora compressa, Walk. List of Homopt. Ins. ii. p. 541 [1].

Hab. MEXICO [1] (*Bilimek; Mus. Vind. Cæs.*), Morelia in Michoacan (*F. D. G.*), Xucumanatlan and Omilteme in Guerrero 7000 to 8000 feet (*H. H. Smith*).

Walker's type is a male; the female is very different, being larger, with the pronotal horn longer and more slender. The specimen in the British Museum, named *A. gilvipes*, which was wrongly identified by Walker with *A. pugnax*, must apparently be referred to this species; through the kindness of Dr. Aurivillius I have been enabled to examine one of Stål's typical *A. gilvipes*, which is quite different, and belongs rather to the *A. pallescens* group. The male of *A. compressa* is a very short stumpy-looking insect.

The specimens from Morelia, above referred to, are a male and a female, and they are smaller, lighter, and more pubescent than the ordinary form of *A. compressa*, but can hardly be regarded as distinct.

9. **Aconophora laticornis.**

Aconophora laticornis, Walk. List of Homopt. Ins., Suppl. p. 134 [1].

Hab. MEXICO [1], Jalapa and Jalisco (*Höge*), Omilteme and Xucumanatlan in Guerrero 7000 to 8000 feet (*H. H. Smith*); GUATEMALA (*Sallé*), San Gerónimo, Cerro Zunil 4000 feet, Totonicapam 8500 to 10,500 feet (*Champion*).

Walker's type of *A. laticornis* is apparently a male; at all events our specimens come so close to it that they cannot be described as distinct. The female, however, is a very different insect, having the pronotal horn very long (nearly as long in some cases as the distance between the base of the horn and the apex of the pronotum) and in some cases almost straight; in one specimen the total length is 15 millim.; the horn, moreover, in the female, is comparatively slender, so that the name becomes a misnomer except for the male, in which it is short and broad, although in one or two specimens it is longer and intermediate in formation between the normal horn of the male and that of the female. The dark colour, shape of the horn, and the dark horizontal band on the tegmina will distinguish the species, of which there is a considerable series of both males and females, from Omilteme, in our collection.

10. **Aconophora marginata.**

♀. *Aconophora marginata*, Walk. List of Homopt. Ins. ii. p. 540 [1].

♂. *Aconophora concolor*, Walk. loc. cit. p. 540 [2].

♀. *Aconophora stabilis*, Walk. loc. cit., Suppl. p. 135 [3].

Hab. MEXICO [1 2 3] (*Bilimek, in Mus. Vind. Cæs.; Sallé*), Jalapa (*Höge*), Tenango del Valle (*Richardson*), Cuernavaca in Morelos, Amula in Guerrero (*H. H. Smith*); GUATE-

MALA, Purula and San Gerónimo in Vera Paz, Guatemala city (*Champion*); COSTA RICA, Volcan de Irazu 6000 to 7000 feet (*Rogers*); PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

I have carefully examined the types of the above-named insects and have thought it best to regard them as belonging to one species, although future writers may be of a different opinion. I can, however, see no point on which to separate them, as in a large series they lead one into the other, and, in fact, some specimens, except for colour, very closely resemble females of *A. laticornis*. The males appear in all cases to have short pronotal horns and must be referred to *A. concolor*, Walk., whereas the females have long horns and must be referred to *A. marginata* and *A. stabilis*. Walker's type of *A. stabilis* is broken and scarcely recognizable, but, so far as can be judged, it is not different from his *A. marginata*.

A considerable series of males and females have been received from Guatemala city.

Var. **æneosparsa.**

Aconophora æneosparsa, Butl. Cist. Ent. ii. p. 348, t. 7. fig. 14[4].

Hab. MEXICO (*Bilimek, in Mus. Vind. Cæs.*), Volcan de Orizaba (*Sallé*[4]), Jalapa (*Höge*); PANAMA, Volcan de Chiriqui (*Champion*).

This is a rather large variety of *A. marginata*, of a greenish-olivaceous colour, with the pubescence more marked in some specimens; it is, however, connected by intermediate forms with the type-form, and cannot be regarded as more than a variety.

11. **Aconophora nitida,** sp. n. (Tab. V. figg. 12, 12 *a*.)

Brevior, pronoto nigro vel nigro-piceo, nitido, densius sat fortiter punctato, spatio inter humeros sat lato, sparsissime flavo-pubescenti, cornu brevissimo; tegmenibus pubescentibus, fere totis nigris, apice exteriori late hyalino; pedibus ferrugineis, femoribus interdum ad partem piceis.

A rather short species, broad between the shoulders, which are prominent, with the pronotum black or pitchy-black, clothed sparingly with golden pubescence, which is also present on the tegmina, except towards the apex; the horn is extremely short, and not broad at the apex; the tegmina are pitchy-black, with a small patch on the costa and the interior third hyaline, the veins on the hyaline portion being testaceous; the clavus, moreover, is more or less testaceous; legs ferruginous or reddish-testaceous, with the femora sometimes partly pitchy.

Long. 8–9 millim.; ab humeris ad apicem cornus $3\frac{1}{2}$ millim.; lat. int. hum. $3\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

This species is closely allied to *A. hadina*, Butl., from Brazil, but has the pronotal horn less produced, and is more shiny and less closely punctured.

We figure a specimen from Bugaba.

It is also closely allied to *A. pugionata*, Germ., from which it differs in much the same points as from *A. hadina*; in fact, if the specimen of *A. pugionata* sent me from the Stockholm Museum is correctly named, I believe that *A. hadina* and *A. pugionata* are identical, especially as both insects come from Brazil.

Walker erroneously assigned the insect described by Butler as *A. hadina* to *A. incumbens*, which is a very peculiar and distinct species, with the rostrum very strongly and abruptly deflexed; it has been separated by Stål to form his genus *Argante*.

12. **Aconophora variipennis,** sp. n. (Tab. V. figg. 13, 13 *a*.)

Brevior, pronoto piceo, sat lato, subtilius punctato, aureo-pubescenti, cornu brevi erecto, humeris prominulis, apice longo curvato; tegminibus variegatis flavo-testaceis, margine costali et maculis quibusdam brunneis vel piceis, tertiâ parte interiori hyalinâ; corpore subtus ferrugineo; pedibus fere totis flavo-testaceis, femoribus partim fuscis.

Rather short and broad, moderately shining, finely but not very closely punctured, with golden pubescence, which is thick on the metopidium; pronotal horn very short and not broad, considerably erect, front of horn, metopidium, and head forming a straight line at an angle of about 60°; tegmina yellowish-testaceous, with the costal margin broadly pitchy, and with other dark markings, the centre of the disc being of an opaque testaceous colour; the interior third part is testaceous hyaline; legs almost entirely light yellow-testaceous, with all the femora more or less infuscate.

Long. cum tegm. 8½ millim.; ab humeris ad apicem cornus 3 millim.; lat. int. hum. 3 millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

One female specimen. This species is allied to *A. nitida*, but is very distinct in colour, shape, and punctuation. From *A. hadina* it may be known by the shape of the pronotal horn, punctuation, &c.

13. **Aconophora subinermis.**

Aconophora subinermis, Stål, Kongl. Sv. Vet.-Ak. Handl. Band. iii. 6, p. 28 [1], viii. 1, p. 35 [2].

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).—Brazil, Rio Janeiro [1].

One female specimen from Mexico in the Vienna Museum. This is a very distinct species, being about as broad between the shoulders as its length from the base of the horn to the apex of the pronotum; the horn is very short and somewhat porrect, and there is a very large and deep impression on either side at the margins. Just behind the shoulders it resembles a *Potnia* rather than an *Aconophora*.

14. **Aconophora nigra.**

Aconophora nigra, Stål, Kongl. Vet.-Ak. Handl. Band viii. 1, p. 35 [1].

Hab. Mexico (*Sallé, in Mus. Holm.*[1]).

This is one of the smallest species of *Aconophora*. Mr. Butler, in his catalogue of the genus (Cist. Ent. ii. p. 349), gives *A. nigra* as synonymous with *A. concolor*, Walk.; but the type of the latter species disagrees with Stål's description, and is very different from a specimen sent me by Dr. Aurivillius, which he says agrees with Stål's type of *A. nigra*, except that the horn is wanting. Stål's description of the species is very meagre:—"Corpore nigro, thorace in ferrugineum obsolete vergente; tibiis fusco-ferrugineis; tegminibus concoloribus, apicem versus fuscis; ceteris ut in *A. hastata*."

15. **Aconophora ensata,** sp. n. (Tab. V. figg. 14, 14 *a*.)

Sat elongata, capite infuscato, marginibus dilutioribus, ocellis distincte inter se quam ab oculis magis remotis, pronoto testaceo distincte fortiusque punctato, humeris prominulis, cornu elongato, nigro, ad basin tenuiori, ad apicem evidenter dilatato; apice prothoracis supra viso brevi minus acuto; tegminibus piceis, tertiâ parte apicali fusco-hyalinâ, et maculâ indistinctâ ad medium testaceâ, colore tamen variabili et nonnunquam dilutiori; pedibus totis ferrugineis, vel femoribus partim infuscatis; abdomine ferrugineo vel fusco-ferrugineo.

A somewhat long species, comparatively broad at the shoulders, which are prominent; head infuscate, with the margins more or less distinctly lighter; ocelli distant from one another; pronotum testaceous, with strong and distinct punctuation, and with a long black horn, which is slender at the base and plainly dilated at the apex; apex of the pronotum, if viewed from above, rather short and blunt; tegmina dark, with the apical portion fusco-testaceous, more or less hyaline, and with a testaceous spot more or less indistinct in the middle, sometimes, however, they are entirely fusco-testaceous with darker markings; legs entirely ferruginous, or with the femora partly infuscate; abdomen more or less dark.

Long. cum tegm. 9–10 millim.; ab humeris ad apicem cornus 4–6 millim.; lat. int. hum. 3 millim.

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*), Atoyac in Vera Cruz (*Schumann*); Guatemala (*Sallé*); Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

The peculiar shape of the horn and the contrast in colour between the pronotum and tegmina will easily distinguish this insect. The specimens in the Vienna Museum collection are larger than the others, and may possibly belong to a different species.

A specimen from the Volcan de Chiriqui is figured.

16. **Aconophora prunitia.** (Tab. V. figg. 15, 15 *a*.)

Aconophora hastata, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 35 (nec Fabr.) [1].

Aconophora prunitia, Butl. Cist. Ent. ii. p. 350, t. 7. fig. 19 [2].

Hab. Mexico [1], Oaxaca (*Sallé* [2]).—Peru [2].

Butler gives *A. hastata,* Stål, as a synonym of *A. laticornis,* which is an entirely different insect. Dr. Aurivillius has sent me a typical specimen of Stål's species, which is identical with *A. prunitia.* *A. hastata* (Fabr.) is allied to *A. lata,* and perhaps is identical with *A. nigrivitta,* Walk.; as there appear to be two species bearing the name of *A. hastata,* Butler's name must be retained.

In Signoret's collection there are two specimens labelled *A. hastata,* Stål, one of which appears to be Walker's *A. concolor,* and the other is allied to *A. pinguis.* In our collection there is a specimen from Omilteme, Guerrero, which either belongs to *A. prunitia,* or is very closely allied to it; the horn, however, is straight and level with the back of the pronotum, whereas in *A. prunitia* it forms an obtuse angle with it; the insect may belong to a new species, but is too close to *A. prunitia* to be described as distinct on one example.

A Mexican specimen is figured.

17. **Aconophora ferruginea,** sp. n. (Tab. V. figg. 16, 16 *a*.)

Minor, capite nigro, pronoto ferrugineo, fortiter densius punctato, cornu nigro vel nigro-piceo, hoc sat longo, apice nonnihil dilatato, humeris prominulis, lateribus ante apicem late sinuatis, apice ipso brevi; tegminibus fuscis vel fusco-nigris ad apicem dilutioribus, sed vix pellucidis; pedibus totis ferrugineis; corpore subtus plerumque ferrugineo.

A small species, with the head black and the pronotum entirely ferruginous, strongly and closely punctured, the punctures on the sides being larger than those in front and towards the apex; the horn is rather long, pitchy, with the apex slightly dilated; shoulders rather prominent; sides of the pronotum broadly sinuate before the apex, which is short and comparatively obtuse; tegmina fuscous, lighter at the apex; legs entirely ferruginous; abdomen ferruginous, rather darker in the centre.

Long. 8 millim.; ab humeris ad apicem cornus $3\frac{1}{2}$ millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. Mexico (*coll. Signoret*); Panama, Bugaba (*Champion*).

Four specimens. This species is closely allied to *A. prunitia*, Butl. (=*A. hastata*, Stål), from which it may at once be known by its coarse punctuation and differently-shaped pronotal horn. The specimen in Signoret's collection named *A. nigra* must be referred to *A. ferruginea*.

We figure a specimen from Bugaba.

18. **Aconophora disparicornis,** sp. n. (Tab. V. figg. 17, 17 *a*, ♂.)

Quoad formam staturamque *A. ferrugineæ* affinis, sed paullo latior et magis nitida, pronoto densius et subtilius punctato, fusco-testaceo, cornu maris brevissimo.

Mas: cornu pronoti brevissimo, crassiori.

Femina: cornu pronoti modico, longiori et tenuiori.

Of a fusco-testaceous colour, with the head, the tip of the pronotal horn, and the underside dark; pronotum closely and comparatively finely punctured, but in this point somewhat variable, with the shoulders somewhat prominent, and the horn very short in the male, slender and of moderate length in the female; tegmina hyaline, darker towards the base; legs testaceous or fusco-testaceous, with the femora, as a rule, more or less infuscate.

♂. Long. 6–7 millim.; ab humeris ad apicem cornus 2 millim.; lat. int. hum. 3 millim.

♀. Long. 7–8 millim.; ab humeris ad apicem cornus 4 millim.; lat. int. hum. 3 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A male specimen is figured.

19. **Aconophora fusiformis,** sp. n. (Tab. V. figg. 18, 18 *a*, ♂; 19, ♀.)

Elongata, nitida, brunnea, plus minusve fusiformis, capite infuscato; pronoto sat fortiter punctato, cornu brevi recto obtuso, apice ultra apicem corporis producto supra viso brevi haud acuto; tegminibus hyalinis ad basin brunneis, venis fuscis vel brunneis.

Mas multo angustior, magis fusiformis, fere totus brunneus, metopidio ad latera testaceo excepto; pedibus fere totis fusco-testaceis.

Femina latior, minus fusiformis, pronoto pone cornu late testaceo; pedibus fuscis, genibus rufis.

Elongate, shining, male narrow and strongly fusiform, almost entirely brown, except at the sides of the metopidium, female broader, testaceous behind the horn for about half of its length; pronotum slightly raised and rounded on the disc, strongly punctured, with a short straight horn, which is blunt if viewed from the side, but slightly tapers to the apex, and with the dorsal ridge very marked throughout; tegmina

brown towards the base, with fuscous or brown veins; legs fusco-testaceous in the male, fuscous with the knees reddish in female.

♂. Long. 7½ millim.; ab humeris ad apicem cornus 3 millim.; lat. int. hum. 2⅓ millim.

♀. Long. 8 millim.; ab humeris ad apicem cornus 3 millim.; lat. int. hum. 3 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

This species differs considerably from any other *Aconophora* I have seen. It is possible that the female described may not belong to the same species, but the general sculpture, shape of horn, &c. are the same.

20. **Aconophora sinanjensis,** sp. n. (Tab. V. figg. 20, 20 *a*, ♂; 21, ♀.)

A. fusiformi affinis, sed minor, minus nitida, pronoto densius et minus fortiter punctato, disco haud rotundato-elevato.

Allied to *A. fusiformis*, but considerably smaller, and with the pronotum much duller and more thickly and less strongly punctured; the horn is extremely short, and the disc is not raised and rounded. There are two specimens in our collection, a male and a female; the male is piceous, with the horn shorter than in the female, and with the tegmina dark, except at the apex of the costa and the interior third; the female is testaceous, with the head and tip of the horn dark, and the tegmina brownish, with testaceous veins; in both sexes the underside is piceous and the legs are fusco-testaceous, with the femora, the apex of the tibiæ, and the tarsi more or less fuscous.

Long. 5–6 millim.; ab humeris ad apicem cornus 2–2⅓ millim.; lat. int. hum. 2–2½ millim.

Hab. GUATEMALA, Sinanja in Vera Paz (*Champion*).

21. **Aconophora temaxia,** sp. n.

Elongata, dilute ferruginea, pronoto subtiliter punctato, pube sat longâ sparsim vestito, cornu pro magnitudine corporis elongato et crasso, plus minusve erecto; tegminibus hyalinis, basin versus supra subtusque punctatis; corpore subtus ferrugineo; pedibus totis dilute testaceis, tibiis anticis et intermediis distincte dilatatis.

Somewhat elongate, of a light ferruginous colour, with the pronotum thickly and finely punctured and sparingly pubescent; the horn is large and long, in proportion to the body, about as long as the rest of the pronotum, and somewhat stout, more or less erect; the shoulders are rather prominent and the apex blunt; tegmina light, hyaline, with the veins testaceous, and the base above and below testaceous and punctured; there are also two darker spots before and behind the middle, which are sometimes indistinct; underside ferruginous; legs entirely of a light testaceous colour, with the anterior and intermediate tibiæ more dilated than is usually the case.

Long. cum tegm. 7 millim.; ab humeris ad apicem cornus 3½ millim.; lat. int. hum. 3 millim.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).

Three female examples. This species in general appearance, if viewed from above, is most like *A. femoralis*, but if viewed from the side the difference is at once apparent; it is, moreover, larger and broader, with the pronotal horn much larger and longer. Two of our specimens have the horn strongly erect, but in the third it is rather shorter and stouter and more depressed.

22. **Aconophora femoralis.** (Tab. V. figg. 22, 22 *a–c*.)

Aconophora femoralis, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 35[1].

Hab. MEXICO [1] (*Mus. Holm.; coll. Signoret; Sallé*), Cuernavaca in Morelos (*H. H. Smith*).

This species is darker and smaller than *A. pallescens*, to which it is closely allied. The typical specimen lent me by Dr. Aurivillius, and which is the one from which our figures are taken, appears to be much lighter in colour than the average examples.

The specimen figured is from the Stockholm Museum.

23. **Aconophora pallescens.** (Tab. V. fig. 23.)

Aconophora pallescens, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 35 [1].

Hab. MEXICO (*Mus. Holm.*[1]; *coll. Signoret*); GUATEMALA, San Gerónimo and Coban in Vera Paz (*Champion*).

A specimen from the Stockholm Museum is figured.

24. **Aconophora viridula,** sp. n.

A. pallescenti affinis, sed latior, virescens, cornu pronoti multo magis depresso, pone deflexo; corpore subtus infuscato; pedibus dilute testaceis.

Closely allied to *A. pallescens*, but easily distinguished by its considerably greater breadth and by the shape of the horn, which is short and almost deflexed; the tegmina are hyaline, with the veins fuscous or testaceous, and the legs are entirely light testaceous; the underside is infuscate; the type specimen is greenish, the colour being especially marked in front, and in life the general colour is probably darkish green; the head is infuscate, with a testaceous border; the tegmina are greenish-hyaline, with the veins testaceous; the underside is infuscate; the legs are light testaceous.

Long. 7 millim.; ab humeris ad apicem cornus $2\frac{1}{2}$ millim.; lat. int. hum. vix 3 millim.

Hab. MEXICO (*Höge*), Teapa in Tabasco (*H. H. Smith*).

Four specimens. Besides these, I also refer to the same species, with some doubt, three specimens from Chontales, Nicaragua (*Janson*), and one from David, Chiriqui (*Champion*).

I think it very probable that *A. pallescens* and other species, which have been described as testaceous, may in life be of a greenish colour.

25. **Aconophora gladiata.**

Aconophora gladiata, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 35 [1].

Hab. MEXICO, Vera Cruz (*Sallé, in Mus. Holm.*[1]).

I have not seen this insect, which appears to have been described from a single specimen, nor can I identify it from the description among the Membracidæ in our collection.

26. **Aconophora obtusiuscula,** sp. n.

Parva, brevis, capite infuscato, pronoto fusco-ferrugineo, subtiliter subrugose punctato, latitudine inter humeros longitudinem fere æquante, cornu brevissimo, crasso, humeris vix prominulis, apice ipso brevissimo, sed

acuto, abdomen haud vel vix superante; tegminibus hyalinis, margine costali basin versus testaceâ; corpore subtus nigro vel piceo; pedibus rufo-testaceis, femoribus plus minusve infuscatis.

A very small and short species, with the head dark, rather long, and with the pronotum fusco-ferruginous, finely punctured, diamond-shaped, the four sides of the diamond being almost equal, the breadth between the shoulders being about equal to the length from the tip of the horn to the apex; the horn is very short and thick and the apex of the pronotum is very short, though acute, and reaches about to the top of the abdomen; the dorsal ridge is strong, and almost ceases a little behind the base of the horn; tegmina hyaline, with the veins testaceous; underside dark; legs rufo-testaceous, with the femora more or less dark.

Long. 6 millim.; ab humeris ad apicem cornus 2 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. Mexico, Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

Four male specimens of this species are contained in the Vienna Museum collection; in all probability the horn is longer in the female.

A. obtusiuscula is allied to *A. pallescens* and *A. femoralis*, but may be known by its short broad form and the shape of the pronotal horn, and by the abrupt cessation or diminution of the strongly marked dark dorsal ridge before the middle of the disc of the pronotum.

27. **Aconophora minuta,** sp. n.

Minima, capite nigro antice utrinque testaceo, pronoto ferrugineo, subtiliter punctato, cornu modico haud erecto, humeris prominulis; tegminibus fere totis hyalinis, venis brunneis; corpore subtus infuscato; pedibus totis testaceis, vel femoribus plus minusve infuscatis.

A very small species, with the head black, testaceous on each side in front; pronotum ferruginous, finely punctured, with the horn rather short, forming almost a straight line with the back of the pronotum, tegmina hyaline; underside black or pitchy; legs entirely testaceous, or with the femora more or less infuscate.

Long. cum tegm. $5\frac{1}{2}$ millim.; ab humeris ad apicem cornus 2 millim.; lat. int. hum. vix 2 millim.

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*).

Two specimens. The very small size of this species will easily distinguish it. Amongst the described *Aconophoræ*, it comes, perhaps, nearest to *A. femoralis*.

ALCMEONE.

Alcmeone, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 558 (1867); xxvi. p. 256 (1869).

This is one of the most distinct of the genera formed by Stål out of the old genus *Hemiptycha*, Germar. It contains six or seven species from Brazil, Cayenne, or Central America; they are easily distinguished by the very broad pronotum, which is suddenly narrowed at the apex into a long aculeate process.

1. **Alcmeone godmani,** sp. n. (Tab. V. figg. 24, 24 *a*, *b*.)

Lata, robusta, nitida, sat fortiter parcius punctata, nigra; capite, metopidio ad summan partem, lateribus pronoti et dorso ante apicem coccineis; vittâ latâ a margine laterum sub humeris ad cornua (modica et retrorsum leviter recurva) extensâ, et maculâ utrinque laterali nigricantibus; processu apicali perlongâ, aculeatâ, nigrâ; tegminibus fuscis; corpore pedibusque testaceis vel fusco-testaceis.

A broad and robust species. Head scarlet; pronotum shining black, with the greater part of the front, the sides, and a space before the apical process scarlet; a narrow scarlet line also runs down the centre of the black portion; on each side beneath the horns there is a broad black band reaching to the margins, and on each side behind the middle there is a round black spot, the top of which is merged in the dark colour of the dorsum; apical process very long, straight, aculeate, black; tegmina fuscous, darker towards the base, sparingly punctured; legs testaceous, the coxæ darker.

Long. cum processu pronoti 15 millim.; lat. int. corn. 10 millim.

Hab. Mexico, Jalisco (*Schumann*).

One male specimen. This is one of the most conspicuous insects among the Membracidæ in our collection.

HYPHINOË.

Hyphinoë, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 558 (1867), xxvi. p. 257 (1869).

This genus seems to be chiefly distinguished by the different conformation of the pronotum in the sexes; this has led to a considerable amount of confusion, as the older authors described the sexes of the same insect as different species. Occasionally there appears to be a tendency to dimorphism in the male.

Hyphinoë contains about a dozen species, which seem to be entirely confined to Central America and the immediately adjoining regions. The other genera formed by Stål out of *Hemiptycha* (apart from *Hemiptycha* proper) are *Pyranthe*, *Proterpia*, *Eualthe*, and *Bubalopa*, and more might probably be added, as the species are very variable. The characters, however, which Stål draws from the relative position of the ocelli with regard to the eyes, and from the proportional size of the parts of the tegmina covered by the pronotum or left exposed, are not always satisfactory; and it is a question whether he has not already gone too far in his division of the genus as at present known.

1. Hyphinoë cuneata.

♀. *Hemiptycha cuneata,* Germ. Rev. Ent. Silb. iii. p. 246[1]; Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 319, t. 6. fig. 26[2].

♂. *Hemiptycha globiceps,* Fairm. loc. cit. p. 319, t. 6. fig. 19[3].

Hab. Mexico[1–3] (*coll. Signoret; Höge; Sallé*), Guanajuato (*Dugès, in Mus. Roy. Belg.*).

In this, as in other species of *Hyphinoë,* the pronotum (which is, as a rule, abruptly declivous before the apical process) is occasionally merely sinuate and almost straight.

2. Hyphinoë camelus.

♂. *Darnis camelus,* Gray, in Griff. Anim. Kingd., Ins. ii. p. 260, t. 109. fig. 3[1].

♀. *Hemiptycha camelus,* Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 319[2].

Hemiptycha sagata, Germ. Rev. Ent. Silb. iii. p. 245[3].

♂. *Triquetra valida*, Walk. List of Homopt. Ins. ii. p. 524 [4].
Thelia obliqua, Walk. Ins. Saunders., Homopt. p. 73 [5].
Hemiptycha viridissima, Walk. List of Homopt. Ins. ii. p. 572 [6].
Hyphinoë viridissima, Butl. Cist. Ent. ii. p. 345 [7].

Hab. Mexico [1–7].

There is only one (male) specimen of this species in our collection; but it is well represented in the Vienna Museum and the Royal Belgium Museum, and there are examples in the British Museum. It varies very considerably in colour; the greenish form is the *Hemiptycha viridissima* of Walker, which Stål writes as a synonym of *H. camelus*. Mr. Butler is of opinion (Cist. Ent. ii. p. 345) that Walker's species ought to be retained as distinct, but after examining a considerable series of the insect I cannot agree with him, and, moreover, he appears to have confused the sexes, for he says:—"We have three examples of each form; and *H. viridissima* not only differs in size and colour, being much larger and greener than *H. camelus*, but it has considerably longer tegmina, is far more coarsely punctured, has the front margin of the pronotum bracket-shaped, the humeral horns prominent, and the posterior process longer." I have examined these six specimens carefully and find that, of the three insects named *camelus*, two are males and one has the abdomen wanting, whereas the three named *viridissima* are females; the specimens of *viridissima* in Signoret's collection are also females, and it may therefore be presumed that that insect must rightly be considered a variety of the female of *camelus*.

There is another variety, which seems to be confined to the male, which has the front and the dark dorsal portions of the pronotum of a deep purplish colour and a variable dark spot on the upper surface just below the horns, which is wanting in the type form; the tegmina also are darker than in typical *H. camelus*. There are four specimens of this variety, labelled "Bilimek, Mexico, 1871," in the Vienna Museum collection. The difference between the sexes is not nearly as marked in this species as in the preceding.

3. **Hyphinoë asphaltina.**

Hemiptycha asphaltina, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 319, t. 6. fig. 20 [1].
♂. *Hemiptycha apriformis*, Walk. List of Homopt. Ins., Suppl. p. 144 [2].
♀. *Hemiptycha pubescens*, Walk. loc. cit. p. 144 [3].
Hyphinoë morio, Stål, Öfv. Vet.-Ak. Förh. xxvi. p. 257 (1869) [4].

Hab. Mexico [1] (*Sallé* [2 3]), Jalapa (*Höge*), Teapa in Tabasco (*H. H. Smith*); Guatemala, Purula and Senahu in Vera Paz, El Tumbador, San Isidro, Volcan de Atitlan 2500 to 3500 feet, Capetillo (*Champion*); Panama, Bugaba, Volcan de Chiriqui 4000 to 5000 feet (*Champion*).—Colombia, Bogota [4]; Venezuela (*coll. Signoret*).

There is a good series of this species in our collection. The specimens are very

variable in size (10–15 millim.), and to a certain extent in shape. As a rule, the pronotum is strongly raised in front and abruptly declivous before the apex; but in several examples it is only sinuate and almost straight. In the collection of the Vienna Museum there is a specimen, set on one side apparently as a new species, which belongs to this variety, and there are several others in our collection, mostly from high altitudes. The shape of the front of the pronotum is also variable; in a male specimen from the Volcan de Chiriqui the pronotal horns are much more marked than is usual in the species, and it might with reason be described as a new species if it were not considered as one of a series. In Signoret's collection there is a specimen, separated apparently on a much slighter difference in the shape of the front of the pronotum, under the name "*fairmairei*." I cannot, however, find that the description has been published. There are a considerable number of these unpublished species in collections, and they cause infinite trouble, as, unless the fact of their not having been published is mentioned, one cannot be certain that the reference has not been missed, and much time is wasted in a fruitless search for the name. Worse than this, however, is the publication of descriptions without locality; four out of six species of *Alcmeone* in the British Museum are so described, and the "Amer. bor." or "Amer. mer." of the earlier writers are almost as bad as no locality at all. The difficulty of identifying the species in Stål's 'Hemiptera Fabriciana' is greatly increased by the fact that he is obliged to give "America meridionalis" so often as the sole locality.

4. **Hyphinoë marginalis.** (*H. marginata*, Tab. V. figg. 25, 25 *a*, *b*.)

♂. *Hyphinoë marginalis*, Fallou, Rev. d'Ent. ix. p. 353[1].

Hab. GUATEMALA (*Sallé*[1]).

M. Fallou's specimen, from the description, is a male, and the four specimens which I have seen are also males; one of these is in our collection, and I have received two from the Belgian Museum and one from the Stockholm Museum, all undetermined. It is a very conspicuous species, being entirely of a lighter or darker violaceous-brown or violaceous colour, with a clearly marked whitish-yellow lateral line on each side at the margins, and the tibiæ and tarsi testaceous. As M. Fallou's description is somewhat isolated I append it:—"Brun violacé. Cuisses de même couleur, avec les pattes et les tarses jaunes. Prothorax trés renflé, formant un énorme bourrelet à la partie supérieure et terminé par une épine aigué noire, n'atteignant pas l'extrémité des élytres. Une bande jaune claire part de chaque côté du bourrelet du prothorax et longe la suture jusqu'à la tache noire de la pointe. Ces bandes jaunes sont elles-mêmes bordées d'un trait noir. Élytres de même couleur que le prothorax. Long. 17 mm."

M. Fallou has kindly sent me the type; there is a specimen in the Royal Belgian Museum exactly agreeing with it, but the other examples are of a uniform dark

violaceous, almost black, colour, and therefore are without the "trait noir" mentioned in the description. All the specimens are labelled "Guatemala."

5. **Hyphinoë tau.** (Tab. VI. figg. 1, 1 *a*, *b*.)

Brevis, pronoto brunneo, sat fortiter punctato, ad latera valde compressa late testaceo, vittâ nigro-brunneâ ab humeris usque ad cornua extensâ, maculâ utrinque laterali nigrâ, dorso ante apicem declivi, processu apicali longo, nigro; metopidio supra viso ante cornua distincte producto, rotundato; tegminibus violaceo-brunneis; pedibus testaceis.

A short and small species, with the pronotum of about the same length, without apical process, as its breadth between the horns, which are moderately produced; the colour of the pronotum is brown or violaceous-brown, with the sides broadly yellow and marked with a round black spot; viewed from above, the brown colour forms the shape of a **T**; there is a broad dark band extending from the shoulders to the horns; the back of the pronotum presents a broad blunt ridge, which is gradually declivous before the apical process, the latter being long and black and strongly ridged above; tegmina of a violaceous-brown colour; legs testaceous, with two or three minute black spots.

Long. 9, cum tegm. 10 millim.; lat. int. corn. 7 millim.

Hab. GUATEMALA, El Reposo 800 feet (*Champion*).

Four specimens, all males.

Var. **atitlana.** (Tab. VI. figg. 2, 2 *a*, *b*.)

Metopidio, supra viso, ante cornua haud vel vix extenso, fere plano, facile distinguenda.

Long. cum tegm. 9 millim.; lat. int. corn. 6 millim.

Hab. GUATEMALA, Volcan de Atitlan 2500 to 3500 feet (*Champion*).

Two male specimens.

This is a very distinct little species, but, unfortunately, all the specimens in the collection are males. It is possible that the Atitlan specimens may prove to belong to a distinct species, as the form of the pronotum is an important point; but in all else they exactly agree with the type form and cannot well be separated until the females are discovered.

6. **Hyphinoë cornuta.** (Tab. VI. figg. 3, 3 *a*, *b*.)

Hyphinoë cornuta, Distant, Ent. Monthly Mag. xvi. p. 12 [1].

Hab. COSTA RICA, Irazu 6000 to 7000 feet (*Rogers*).

In several points this insect agrees with the description and figure of *Hemiptycha punctum*, Fairm. (Ann. Soc. Ent. Fr. sér. 2, iv. p. 318, t. 6. fig. 22), from Brazil; but in the latter species the pronotum is longer and elevated, instead of being slightly curved downwards at the apex.

H. cornuta is closely allied to the preceding species, but is smaller, with the back of the pronotum rather more sinuate, and it may be immediately distinguished by the broad black band beneath the horns reaching to the humeral margins; Mr. Distant, who has himself sent me his type, a female, does not notice this point in his description.

7. **Hyphinoë purulensis,** sp. n. (Tab. VI. figg. 4, 4 *a*, *b*, ♀; 5, 5 *a*, *b*, ♂.)

♀. Violaceo-brunnea, pronoto elongato, dorso fere recto, fortiter sat remote punctato, margine anguste flavâ ab humeris usque ad apicem nigrum extensâ, puncto utrinque sat magno laterali, et altero parvo pone cornua, nigro, cornibus modicis, subacutis, apicibus nigris; tegminibus violaceo-brunneis, nitidis, fortius punctatis; pedibus ferrugineis.

♂. Multo minor, metopidio supra viso ante cornua obtuso semicirculariter extenso, laterum maculis majoribus, et colore dilutiore.

Female elongate, shining, olivaceous or violaceous-brown; the pronotum elongate, almost straight along the back, and gradually narrowed into a slender apical process, which is very slightly curved over the tegmina; the apex and tips of the horns are black, and there is a black spot on each side and another behind the horns; the lateral margins from the shoulders to the apex are narrowly yellow, the colour being distinctly marked; the horns are robust, subacute, and directed upwards, with the disc between them broad and slightly hollowed; tegmina dark violaceous-brown, strongly punctured, especially towards the base; legs ferruginous.

Long. 17, cum tegm. 18 millim.; lat. int. corn. 9 millim.

Male much smaller, with the frontal portion of the pronotum semicircularly extended beyond the horns, which are blunt; the yellow margins of the pronotum are broader and the lateral black patches much larger; the black patches behind the shoulders are more distinct, and they show a tendency in one or two specimens to become linear and to join the black tips of the horns; in neither sex is there a black subhumeral band.

Long. 13, cum tegm. 14 millim.; lat. int. corn. 7 millim.

Hab. GUATEMALA, Purula and Sabo in Vera Paz (*Champion*).

Besides the specimens from these localities, there is a testaceous example from Senahu, Vera Paz, with a minute lateral black spot on each side of the pronotum, and no spot behind the shoulders; it has the horns, too, shaped more as in *H. cornuta*, but there is no dark subhumeral band. The horns in several of these allied forms appear to vary occasionally, as in *Ceresa*, and it is possible that, when more specimens are forthcoming, some of the described species of *Hyphinoë* may prove to be not really distinct.

In our collection there is also a small cornute male, from Cerro Zunil, Guatemala (*Champion*), which closely resembles *H. purulensis*, except that it is of a lighter colour than the ordinary form, and has no black spot behind the shoulders; at first sight it looks like a distinct species, but it agrees almost exactly in size and shape with a dimorphic cornute male of *H. asphaltina* which has been before referred to. I have, therefore, though with considerable hesitation, included it as a dimorphic form of the male of *H. purulensis*.

8. **Hyphinoë vulpecula,** sp. n. (Tab. VI. figg. 6, 6 *a*, *b*.)

Elongata, brunnea, nitida, cornibus apicem versus et apice ipso pronoti nigris, tegminibus brunneis; pronoto elongato, leviter subrugoso, sat fortiter remotius punctato; cornibus longioribus, leviter curvatis ad apicem obtuse rotundatis; dorso paullo post medium sensim declivi; processu longo usque ad apicem tegminum extenso; pedibus testaceis.

Elongate, very shining, of a unicolorous brown colour, with the dorsal ridge almost straight, very slightly sinuate behind the middle, and prolonged into a narrow process behind, which almost reaches the apex of the tegmina; tegmina brown or brownish-testaceous, the basal half strongly punctured; legs testaceous. Underside variable, but darker than the rest of the body.

Long. 16–17 millim.; lat. int. corn. 10 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Two female specimens. This is a very distinct species, and at first sight appears to belong to *Eualthe* or *Hemiptycha* proper; but I believe that it is rightly placed under *Hyphinoë*, and that it is nearly related to *H. cornuta* and *H. purulensis*.

9. **Hyphinoë bigutta.** (Tab. VI. figg. 7, 7 *a*, *b*.)

Hyphinoë bigutta, Walk. List of Homopt. Ins., Suppl. p. 142[1].

Hab. GUATEMALA (*Scherzer*[1]), El Reposo, Pantaleon 1700 feet, Volcan de Atitlan 2500 to 3500 feet (*Champion*).

All the specimens of this species hitherto discovered are females; it is a stout testaceous-yellow species, with a minute black spot at the sides of the pronotum (sometimes absent), and the tips of the horns and the apex of the pronotum black. *H. bigutta* has somewhat the facies of a large, stout species of *Ceresa*. Walker gives the length wrongly (wings 11 lines); the length "cum tegminibus" is 13 or 15 millim., and the breadth between the horns 8 or 9 millim. A specimen from El Reposo is figured.

10. **Hyphinoë ochracea,** sp. n. (Tab. VI. figg. 8, 8 *a*.)

Ochracea, subtus brunnea, vittâ latâ nigrâ ab humeris pronoti usque ad apicem cornuum extensâ; pronoto elongato, antice lato, sat fortiter punctato; metopidio ante cornua (breviora et obtusa) subrotundato, dorso fere recto in processum leviter curvatum fere apicem tegminum attingentem prolongato; tegminibus brunneis; pedibus testaceis.

A large and robust species, ochraceous, with the underside dark, and with a broad black band extending beneath the horns to the humeral margins of the pronotum; the margins from the shoulders to the apex are usually lighter ochraceous or yellow, but the colour is not well defined; the extreme apex of the horns, which are short and blunt, and sometimes the extreme apex of the pronotal process, are black; pronotum very broad in front, subrotundate in front of the horns and convex between the horns; moderately strongly punctured; apex of the horns and pronotal process black; the pronotum is somewhat rugose, with large and not very closely-set punctures; the dorsal ridge is gradually declivous a little behind the middle, and is continued in a long, sharp, apical process, which reaches to the apex of the tegmina; legs testaceous or brownish-testaceous. The species may at once be known by the shape of the horns, which are much longer and more curved than in any other member of the genus, and rather resemble the horns of the species of the genus *Hemiptycha* proper.

Long. 15 millim.; lat. int. corn. $7\frac{1}{2}$ millim.

Hab. GUATEMALA (*Mus. Roy. Belg.*; *Mus. Holm.*).

One specimen in the Stockholm Museum, and two others in the Royal Belgium Museum at Brussels; the description is taken from these latter.

This species may easily be known by its colour, taken in conjunction with the convex pronotum; in shape it resembles a large female of *H. cuneata*.

Several of the species of the genus above described or noticed differ very much in facies, but it appears best to assign them all to *Hyphinoë* rather than to create new genera for them. Stål appears occasionally to become confused over his own genera;

thus, Mr. Butler (Cist. Ent. ii. p. 345) notices that he has erroneously referred *Hemiptycha* (*Hyphinoë*) *placida*, Germ., to *Pyranthe*.

ICTARANTHE, gen. nov.

Brevis, robustus, capite fere æque longo ac lato, ocellis inter se paullo magis quam ab oculis distantibus, his magnis, prominulis ; pronoto dorso late rotundato, convexo, haudquaquam carinato, cornibus modicis sat reflexis, lateribus ad margines profunde semicirculariter impressis ; tegminibus areis discoidalibus duabus interiori multo majori.

Short and robust ; the head about as long as broad, with the ocelli a little more distant from one another than from the eyes, which are large and rather prominent ; the pronotum has the back broadly rounded and convex, and the sides deeply impressed in a large semicircle at the margins ; the outer of the two discoidal areas is very much smaller in proportion to the inner than is usual in the allied genera.

This genus is closely related to *Pyranthe*, Stål, from which it differs in the position of the ocelli, and the deep and regular impressions of the sides of the pronotum ; from most of the species of that genus it may at once be known by its convex dorsum, but *Pyranthe flavo-marginata* resembles it in this respect.

1. **Ictaranthe latifrons,** sp. n. (Tab. VI. figg. 9, 9 *a–c*, ♀.)

Brevis, sat latus, testaceus, cornibus pronoti apicem versus nigricantibus ; capite fere lævi, metopidio lato, convexiori, leviter punctato, cornibus modicis infra nigro-carinatis ; pronoto luteo, impressionibus ad margines dilutioribus, lateribus ipsis pone medium in processum acutum sinuatim contractis, apice nigro ; tegminibus hyalinis, margine exteriori infuscatâ ; corpore subtus fusco-testaceo ; pedibus testaceis.

Entirely testaceous, with the exception of the upper apical portion of the horns above, and a line underneath reaching to the margins, as well as the apex of the pronotal process, which are black or brownish-black ; the outer portion, also, of the lateral impressions on the pronotum is whitish-testaceous ; the head is almost impunctate, and the pronotum is more strongly punctured at the sides than on the disc ; the lateral impressions are very distinct if viewed from above, and give the upper surface the appearance of being contracted in the middle, as is often the case with *Ceresa* ; tegmina hyaline, with the extreme base dark and punctured, and the external margins infuscate ; legs testaceous.

Long. cum tegm. 9 millim. ; lat. int. corn. 6 millim.

Hab. Panama, Bugaba (*Champion*).

One female specimen. This insect, at first sight, very strongly resembles certain species of *Ceresa*, and it was sent to me placed among specimens of that genus.

TOMOGONIA.

Tomogonia, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 258 (1869).

This genus contains two species, one from Guatemala and another from Colombia ; the former of these is the *Smilia vittatipennis* of Fairmaire, which superficially resembles a *Ceresa*, from which genus it is at once distinguished by the venation of the tegmina.

1. **Tomogonia vittatipennis.** (Tab. VI. figg. 10, 10 *a*.)

Smilia vittatipennis, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 293, t. 5. fig. 3 [1].
Tomogonia vittatipennis, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 258 [2].

Hab. GUATEMALA [1] (*coll. Signoret, in Mus. Vind. Cæs.*).

This species is not represented in our collection.

The *Ceresa*-like form, the round dark spot on each side of the pronotum, and the long dark band on the exterior portion of the tegmina will at once distinguish *T. vittatipennis*.

CYMBOMORPHA.

Cymbomorpha, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 558 (1867) ; Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 33.

1. **Cymbomorpha prasina.** (Tab. VI. figg. 11, 11 *a*, *b*.)

Smilia prasina, Germ. Rev. Ent. Silb. iii. p. 234 (1835) [1].

Cymbomorpha (*Aulacotropis*) *prasina*, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 34 [2].

Hab. GUATEMALA, Cubilguitz in Vera Paz (*Champion*) ; PANAMA, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).—BRAZIL [1].

I am indebted to Dr. Goding for the identification of this species. I have not had an opportunity of examining a typical specimen of *C. prasina* myself ; the differences between the various species seem somewhat obscure, and cannot be made out satisfactorily from the descriptions. *C. prasina* externally resembles *C. vaginata*, Germ. (*campestris*, Fairm.), of which there are specimens in the British Museum, but it is less strongly sculptured. A specimen from Cubilguitz is figured.

NASSUNIA.

Nassunia, Stål, Kongl. Sv. Vet.-Ak. Handl. Band iii. 2, p. 30 (1860).

This genus is closely allied to *Smiliorachis*, from which it differs in having the shoulders armed with a sharp spine on each side, thus resembling *Ceresa* ; from the latter genus, however, it may be at once known by the oblong and parallel apical areas, and the single small discoidal area of the tegmina.

1. **Nassunia bispina.** (Tab. VI. figg. 12, 12 *a*, *b*.)

Smiliorachis bispina, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 290 [1].

Hab. PANAMA, Bugaba (*Champion*).—COLOMBIA [1] (*Mus. Roy. Belg.*).

We have received two specimens of this species from Chiriqui.

DYSYNCRITUS, gen. nov.

Parvus, oblongus, sat angustus, capite modico ; metopidio supra oculos anguste utrinque impresso ; pronoto supra viso obtuse antice prominulo, humeris sat prominulis, postice sensim acuminato, dorso a latere viso angusto, plus minusve sinuato, carinâ centrali parvâ, distincte elevatâ, acutâ ; tegminibus fere intectis apicem pronoti longe superantibus, corio areis apicalibus quinque, haud stylatis, oblongis, venis crassis, curvatis, areâ discoidali unâ, areâ basali tertiâ longe petiolatâ, aream discoidalem simulante ; clavo toto intecto, venâ magnâ ad basin marginem haud procul a medio attingenti ; tibiis posticis utrinque nigro-spinosis.

Oblong, subparallel, with the head moderately large; metopidium almost straight, narrowly impressed transversely on each side above the head; pronotum kite-shaped, with the shoulders distinctly but not strongly prominent, gradually narrowed behind, very narrow in comparison with the tegmina if viewed from the sides, the central carina distinct, more or less sinuate, the apex ceasing considerably before the apex of the tegmina; tegmina large, corium with five apical areas, none of which are stylate, but all more or less oblong, with the veins thick and more or less curved; there is one discoidal area near the exterior margin, and the third basal area is so strongly petiolate that it appears like a discoidal area in the centre of the disc; corium entirely exposed, with a large vein proceeding from the base and touching its margin not far from the centre; posterior tarsi longer than the others, posterior tibiæ with rows of spines on each side.

This genus evidently belongs to the Darninæ, and it appears to be rather closely related to *Nassunia*, from which, however, it is very different as regards facies; in general appearance it resembles a narrower form of *Hypamastris*.

1. **Dysyncritus intectus,** sp. n. (Tab. VI figg. 13, 13 *a*, *b*.)

Sat angustus, brunneus, testaceo albidoque variegatus, capite latitudine variante, testaceo, unicolori, vel brunneo-asperso; pronoto vittâ vel maculâ albescenti pone medium et alterâ ante apicem, dense fortiusque punctato, haud nitido, apice acuminato; tegminibus hyalinis basin versus, medio excepto, opacis, punctatis, venis partim nigricantibus, partim testaceis, apice exteriori fuscato; abdomine testaceo; pedibus testaceis, tibiis et femoribus plus minusve infuscatis, his interdum fere totis nigricantibus.

Head unicolorous, testaceous, or mottled with brown; prothorax dark brown, variegated with testaceous and whitish spots or patches, there being two whitish or brownish-white spots or bands behind the middle and before the apex; with the exception of these markings the front parts are lighter than the apical portion, and are very variable in shade of colour; the surface of the pronotum is dull, closely and strongly punctured; tegmina hyaline, opaque and punctate towards the base, with the exception of the central portion; veins large, partly black and partly testaceous, the outer margin at the apex infuscate; abdomen testaceous; legs testaceous, with the tibiæ and femora more or less infuscate; the dorsum, if viewed from the side, is variable in sinuation, the front part being more raised in some cases than in others.

Long. cum tegm. 5 millim.; lat. int. hum. 2 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Juan in Vera Paz, Pantaleon 1700 feet (*Champion*).

A specimen from Teapa is figured.

DARNOIDES.

Darnoides, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 495 (1846).

This genus is represented by three or four species from Central or South America; with the exception of *D. limbata*, Fairm., they are small insects, and are more closely allied to *Acutalis* than to *Darnis*, to which they bear very little resemblance. I believe that *D. brunnea*, Germ., and the insect here described probably belong to a separate genus, but it is better to leave all the species together in the present state of our knowledge. Apart from the shape and size, the venation of the tegmina is somewhat different, the strongly-marked discoidal area in *D. limbata*, the type of the genus, being absent or only slightly indicated in the smaller species; the general type of the venation, however, is the same, and the number of discoidal areas seem more variable than in any other

genus I have examined: Fairmaire gives the proper number as one, and Stål (Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 559) as two; but in a specimen of *D. nigroapica* in the Royal Belgian Museum collection there are three on one tegmen and two on the other, the central basal area being divided by a well-marked vein at about the middle, this probably accounting for the discrepancy between Fairmaire and Stål.

1. **Darnoides affinis,** sp. n. (Tab. VI. figg. 14, 14 *a*, *b*.)

Parvus, flavo-testaceus, apice pronoti pectoreque nigris; pronoto haud nitido, dense et distincte punctato, a dorso viso fere æquali, vel antice leviter rotundato-elevato, apice longo acuto; tegminibus fere totis intectis, ad basin punctatis, hyalinis, venis testaceis, apicem versus brunneis; abdomine pedibusque testaceis, femoribus ad partem nigris.

Entirely testaceous, or sometimes apparently with a greenish tinge, which is probably more apparent in life, with the apex of the pronotum and the breast black; pronotum dull, closely and distinctly punctured, if viewed from the side almost straight, or slightly rounded and elevated in front, the apex produced into a long acute process, the central line distinct; tegmina large, almost entirely uncovered, hyaline, with the veins testaceous, brown towards the apex; abdomen and legs testaceous; ovipositor of female black.

Long. cum tegm. $5\frac{1}{2}$–6 millim.; lat. int. hum. 3 millim.

Hab. Mexico, Atoyac in Vera Cruz (*H. H. Smith*); Guatemala, El Reposo (*Champion*); Panama, David in Chiriqui (*Champion*).

This insect is closely allied to *D. brunnea*, Fairm. (*Smilia brunnea*, Germ. Rev. Ent. Silb. iii. p. 308), from Brazil; the latter, however, appears to be larger and more shining, but the descriptions given are so meagre that it is difficult to determine it. The specimens placed under the name *D. brunnea* in the Royal Belgian Museum have each of them a narrow black band across the pronotum at the shoulders, and the veins of the tegmina lighter and less distinct; but Germar says nothing about the black band, and the specimens referred to should probably be assigned to a new species.

A specimen from El Reposo is figured.

SCAPHULA.

Scaphula, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 494 (1846).

The species described below I had originally referred to a new genus near *Darnoides*, and described it as the type, but on examining Fairmaire's figures of the tegmina (*l. c.* t. 7) I found that his fig. 19 gave a very fair representation of the tegmina of the species, although it certainly did not in any way (as I had before noticed) represent the tegmina of *Acutalis*, to which Fairmaire assigns the illustration in his table (*l. c.* p. 530); on comparing the description it was evident that Fairmaire had made an error in his numbering of the figures, and that fig. 19 must be referred to *Scaphula*, and fig. 20 to *Acutalis* *. The description of the genus given by Fairmaire is very meagre, but I

* As the figures of the tegmina on this plate of Fairmaire's (*op. cit.* t. 7) are in a great state of confusion, as Stål in part has noticed (Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 21, note), it may be as well to correct them fully, as they are at present most misleading. Fig. 5 (*Tragopa*) and fig. 15 (*Darnoides*) are correct, as also is fig. 18 (*Acutalis*); the latter figure, however, answers to my genus *Micrutalis*; fig. 9, assigned by

have little doubt that the species here noticed must be placed under it. As he was the first person who wrote much on the group, it is hardly to be wondered at if there is considerable confusion in collections with regard to the right determination of the insects belonging to it.

1. **Scaphula melanocephala,** sp. n. (Tab. VI. figg. 15, 15 *a*, *b*.)

Brevis, lata, nitida; capite nigro; pronoto læte castaneo, distincte remotius punctato, humeris obtuse prominulis, a dorso viso leviter rotundato, ad apicem brevissimum et obtusissimum depresso; tegminibus fere totis intectis, fusco-testaceis, margine exteriori ad basin nigrâ, punctatis, apice late dilutiori, venis distinctis, infuscatis; abdomine brunneo-testaceo; pedibus testaceis.

A small, short, broad, and shining species, with the head deep black, unicolorous, and the pronotum of a bright castaneous colour, distinctly and not very closely punctured, more strongly at the sides, where it is impressed; dorsum, if viewed from the side, slightly rounded, depressed before the apex, which is very short and obtuse; tegmina extending far beyond the apex of the pronotum, with the clavus exposed, fusco-testaceous, lighter hyaline for about the apical third, exterior margin black and punctured towards base, veins distinct; abdomen brownish-testaceous; legs testaceous.

Long. $3\frac{1}{2}$ millim.; lat. int. hum. 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

One female specimen.

HETERONOTUS.

Heteronotus, Laporte, Ann. Soc. Ent. Fr. i. p. 96 (1832); Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 548; Butler, Cist. Ent. ii. p. 356.

This genus contains about a dozén species, which have mostly been described from Brazil; they are among the most extraordinary forms of the Membracidæ, and bear a strong likeness to large species of ants, the resemblance being evidently protective. The species of the genus *Heniconotus*, Stål, about a dozen in number, were formerly included under *Heteronotus*.

1. **Heteronotus quadrinodosus.**

Heteronotus quadrinodosus, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 499, t. 7. fig. 27 [1].
Heteronotus quinquenodosus, Stål, Stett. ent. Zeit. 1864, p. 70 [2].

Hab. MEXICO [1 2], Orizaba (*Sallé*).

Mr. Butler (Cist. Ent. ii. p. 357) has pointed out the confusion that has arisen between this and the succeeding species; they may at once be known by the fact that the strong ventral spine is emitted from the penultimate lobe of the pronotum in *H. quadrinodosus*, and from the last lobe (which thus bears three spines) in *H. trinodosus*.

Fairmaire to *Parmula*=*Horiola*; fig. 11, assigned to *Horiola biguttata*, belongs to *Parmula* (Fairmaire does not refer to the species at all in his descriptions); fig. 14, assigned to *Horiola gibbula*, belongs to a division of *Parmula*, which, perhaps, may form a new genus (Fairmaire himself, in his description, *l. c.* p. 491, assigns it to *Parmula*); fig. 19, assigned to *Acutalis*, belongs to *Scaphula*; and fig. 20, assigned to *Scaphula*, belongs to *Acutalis* proper.

2. **Heteronotus trinodosus.** (Tab. VI. figg. 16, 16 *a*, *b*, ♂; 17, ♀.)

Heteronotus quadrinodosus, Walk. List of Homopt. Ins. ii. p. 592 (nec Fairm.) [1].
Heteronotus trinodosus, Butl. Cist. Ent. ii. p. 357, t. 7. fig. 8 [2].

Hab. Mexico [1 2] (*coll. Signoret, in Mus. Vind. Cæs.*: ♂), Atoyac in Vera Cruz [♂], Teapa in Tabasco [♀] (*H. H. Smith*); Guatemala, Panzos in Vera Paz (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

The insect which I take to be the male of this species is more darkly coloured than the female, and has the terminal lobe of the pronotum slightly longer and more oval, with the two lateral spines at its apex very small. The males seem scarcer than the females, which latter, without exception, have the longer spines. As the insects agree closely in all other points, I feel sure that they cannot be regarded as separate species. I have not, however, seen the distinction of the sexes given by any author.

We figure a male specimen from Atoyac and a female from the Volcan de Chiriqui.

Subfam. *TRAGOPINÆ*.

This subfamily contains two genera only, which are distinguished by having the tegmina externally coriaceous and opaque, with the veins of the coriaceous portion indistinct and sometimes scarcely distinguishable; the character of the venation, moreover, is peculiar. Stål separates the Darnida and Smiliida from his Tragopida as having all the tegmina membranous; but this is not the case with several of the genera which he himself assigns to the two groups (Hem. Afr. p. 83), such as *Entylia*, *Amastris*, and *Oxygonia*, which have the external portion of the base of the corium opaque, punctured, and more or less coriaceous. In *Parmula*, and in one or two other genera, there are coriaceous patches on the tegmina. Dr. Goding places *Parmula* under the Tragopina (Trans. Am. Ent. Soc. xix. p. 253); but it cannot be separated far from *Amastris*, and Stål (Hem. Fabr. p. 29) includes it rightly under his subfamily Smiliida.

The genera may be distinguished as follows:—

I. Tegmina nearly covered by the pronotum; lateral border of the tegmina very broad, occupying about one-third of their surface . . . . . *Tragopa*, Latr.
II. Tegmina with their external half free; lateral border of the tegmina moderate, not occupying more than one-eighth of their surface . . . . . *Horiola*, Fairm.

TRAGOPA.

Tragopa, Latreille, in Cuvier's Règne Anim. v. p. 219 (1829); Germar, Rev. Ent. Silb. iii. p. 545; Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 18; Öfv. Vet.-Ak. Förh. xxvi. p. 231 (1869).

A considerable number of species have been described from Tropical South America

as belonging to this genus; they are easily distinguished by the very large margin and peculiar venation of the tegmina. Stål has divided the genus into four subgenera—*Tragopa*, i. sp., *Ceratopola*, *Tropidolomia*, and *Stilbophora*; the differences, however, are for the most part rather obscure.

As far as I can gather, the two species below described are the only members of the genus that have hitherto been recorded from Central America.

1. **Tragopa insignis,** sp. n. (Tab. VI. figg. 18, 18 *a*.)

Brevis, lata, nitida, convexa; capite subquadrato, antice producto; pronoto subparallelo, sparsim pubescenti, leviter punctato, punctis quibusdam majoribus interspersis, humeris prominulis, fusco vel fusco-nigro, vittis irregularibus et apice testaceis, apice subtruncato, dorso a latere viso antice et postice sensim et æqualiter declivi, ad medium fere recto; tegminibus hyalinis, parte exteriori fuscâ; corpore subtus fusco; pedibus teretibus, fusco-testaceis.

A large and conspicuous species; broad, shining, evenly convex; head large, almost subquadrate, produced in front; pronotum subparallel, sparingly pubescent, finely punctured, with very irregular rows of shallow and indistinct large punctures, central line very indistinct, shoulders slightly and bluntly prominent, fuscous or fuscous-black, with irregular bands across the middle, and the apex more or less clearly testaceous (sometimes the testaceous colour prevails, but it is very variable); the dorsum is evenly rounded in front and behind, and the apex is subtruncate; tegmina hyaline, with the exterior part fuscous; underside fuscous; legs slender, testaceous or fusco-testaceous.

Long. 5–6 millim.; lat. int. hum. 4–5 millim.

Hab. Panama, Bugaba (*Champion*).

A small series. This species appears to belong to the subgenus *Stilbophora*, Stål, and to be somewhat closely allied to *T. gilviceps*, Stål, to judge by the very meagre description (Bidrag till Rio Janeiro-Traktens Hem. p. 31).

2. **Tragopa bugabensis,** sp. n. (Tab. VI. figg. 19, 19 *a*, *b*.)

Brevis, lata, nitida, unicolor, castanea, vel nigro-brunnea, vel nigra; pronoto lato, clypeiformi, levissime remotius punctato; humeris obtuse et breviter prominulis, apice late rotundato; tegminibus fusco-hyalinis, parte exteriori fuscâ; pedibus testaceis vel fusco-testaceis.

A small, short and broad, shining species, unicolorous, but varying in colour in different specimens, being castaneous, fuscous-brown, or deep black, with the pronotum broad and shield-shaped, very finely and rather remotely punctured, with the central line very indistinct, but more marked in some specimens than in others; shoulders bluntly and shortly prominent, apex broadly rounded; tegmina fusco-hyaline, with the exterior margin broadly brown; underside fuscous; legs testaceous or fusco-testaceous.

Long. $3\frac{1}{2}$ millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

Several specimens. This species appears to belong to one of the sections of Stål's subgenus *Tropidolomia*.

Nota.—In Silbermann's 'Revue Entomologique,' iv. p. 191 (1836), a species is described by Burmeister under the name *Tragopa ephippium*, with the locality "De l'Amérique Centrale." This is evidently an *Acutalis* or *Micrutalis*, and probably a variety of *Micrutalis binaria* (Fairm.) or *M. mœsta* (Stål).

HORIOLA.

Horiola, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 492 (1846); Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 21.

This genus is closely allied to *Tragopa*, from which it differs in having about half the tegmina free and with much smaller margins. *Horiola* proper only contains one or two very variable species; it has, however, been increased by the addition of species belonging to *Micrutalis*, such as *Horiola discalis*, Walk. (List Homopt. Ins., Suppl. p. 154), &c.

1. **Horiola arcuata.** (Tab. VI. figg. 20, 20 *a*, *b*.)

Darnis arcuata, Fabr. Syst. Rhyng. p. 29[1].
Darnis lineola, Fabr. loc. cit. p. 30[2].
Darnis glabrata, Fabr. loc. cit. p. 31[3].
Darnis elegantula, Perty, Del. Anim. art. Bras. p. 178, t. 35. fig. 11[4].
Tragopa picta, Am. et Serv. Hist. des Ins., Hém. p. 546[5].
Horiola lineolata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 492[6].

Hab. Panama, Bugaba and David in Chiriqui, Taboga I. (*Champion*).—South America[1 2 3], Bogota (*Mus. Holm.*), Cayenne[6], Brazil[4 5].

This species is very variable, but the series from Bugaba appears in great measure to set at rest the question of synonymy, for the specimens vary very much in colour and size, and among them are examples which answer to typical specimens of *H. glabrata* (*picta*) as well as of *H. arcuata*. A specimen from Bugaba is figured.

In the Royal Belgian Museum there is a very fine male specimen of *H. picta* labelled "Florata," "La Cigale Fleurie de Surinam" (*cf.* Stoll, Cigales, t. 16. fig. 89).

Subfam. *SMILIINÆ*.

The Smiliinæ may be distinguished from the Darninæ by having the third apical cell of the tegmina stylate or petiolate, with the adjacent cells contiguous to one another. The shape of the third apical cell is usually subtriangular, but in some instances, as in *Hypamastris*, it is semicircular, and the vein forming its stalk bisects the base of the arc. Stål separates the subfamily from the Tragopinæ, as already stated, on the ground that the tegmina are entirely membranous; but this is not correct, as in many species the external margin towards the base is coriaceous. The subjoined table (pp. 87–90) will serve roughly to distinguish the genera, but it must be regarded as simply an aid to their identification, and will probably break down in certain points when fresh genera and species are discovered, in the same way that I have found Stål's tables break down in some cases; in fact I should much prefer to leave the tables out altogether, if it were not for the fact that, in spite of their necessary imperfections, they are often of great service to students as "sign-posts."

It might, perhaps, be of advantage to divide this subfamily into groups, but it would be hard to define where they begin and end. Dr. Goding (Trans. Am. Ent. Soc. xix. pp. 253 *et seq.*) forms four tribes—Cerasini, Polyglyptini, Smiliini, and Telamonini; but the Cerasini might, with reason, be further subdivided into three—Cyphoniini, Cerasini, and Acutalini; and the Polyglyptini lead directly into the Smiliini through a new genus *Polyglyptodes*.

I. Tegmina free, with the clavus uncovered, its interior margin touching the external margin of the posterior process of the pronotum.
  1. Corium with two contiguous veins (presenting the appearance of one vein ‡) proceeding from the base, dividing and forming an oval area at a short distance from the base.
    A. Pronotum with the posterior process trifurcate.
      a. Pronotum with strong lateral suprahumeral horns.
        *a**. Process of pronotum with two upright erect spines in front . . . . . *Cyphonia,* Lap.
        *b**. Process of pronotum without erect spines . . . . . *Poppea,* Stål.
      b. Pronotum without lateral horns, shoulders only slightly prominent . . . . . *Clepsydrius,* gen. nov.
    B. Pronotum with the posterior process not trifurcate.
      a. Pronotum convex, contracted in the middle, and very strongly inflated behind, terminating in a single long spine; shoulders only slightly prominent . . . . . *Parantonaë,* gen. nov.
      b. Pronotum strongly compressed and carinate, gradually narrowed into a long sharp process behind.
        *a**. Pronotum with strong lateral horns, and carinate from just behind the horns to the apex.
          a†. Dorsum strongly curved; head plainly transverse; styles of male long and pointed . . . . . *Ceresa,* Am. et Serv.
          b†. Dorsum nearly straight; head scarcely transverse; sculpture coarser . . . . . *Centrogonia,* Stål.
        *b**. Pronotum convex at least as far as the middle, almost always without lateral horns; styles of male short and obtuse at the apex . . . . . *Stictocephala,* Stål.
  2. Corium with two distinct and not contiguous veins proceeding from or from near the base; the ulnar vein dividing and forming an oval area at a short distance from the base; size small.
    A. Corium with one discoidal area; upper surface dull . . . . *Trachytalis,* gen. nov. p. 115
    B. Corium with two discoidal areas; upper surface shining . . *Euritea,* Stål.

---

‡ This contiguous double, or in some cases apparently single, vein, which proceeds from the extreme base and soon divides, is perhaps best regarded as the ulnar vein in all cases; the radial vein may then be regarded as either wanting or present, and this will form the basis of a clear division: the meaning of this will be evident if the tegmina of *Cyphonia* and *Antianthe* (v. p. 89 nota), for example, be compared.

3. Corium with three distinct and not contiguous veins proceeding from or near the base, and extending in almost straight lines until beyond the middle.

A. Tegmina with five apical areas.

a. Tegmina with one discoidal area . . . . . *Phacusa,* Stål.

b. Tegmina with no discoidal area . . . . . *Acutalis,* Fairm.

B. Tegmina with four apical areas . . . . . *Micrutalis,* gen. nov.

II. Clavus and more or less of corium covered by the pronotum.

1. Wings with apical area strongly stylate.

A. Corium with two closely contiguous veins, or one vein proceeding from the base, dividing and forming an oval area just before the base; areas more or less irregular.

a. Elytra with coriaceous patches, not punctured externally, except at the extreme base . . . . . *Parmula,* Fairm.

b. Corium with the external costal margin punctured and opaque, and more or less coriaceous for about half its length.

*a**. Dorsum raised and carinate . . . . . *Amastris,* Stål.

*b**. Dorsum convex and broad, not carinate . . . . . *Hypamastris,* gen. nov.

B. Corium with two long veins proceeding from the base, straight, elongate, and parallel, uninterrupted by transverse venules before the middle; pronotum with a porrect process in front; open space of the tegmina divided by the claval suture very large.

a. Pronotum shuttle-shaped, narrowed in front and behind; tegmina with five apical areas . . . . . *Polyglypta,* Burm.

b. Pronotum parallel-sided behind the shoulders, broadly truncate at the apex; tegmina with three apical areas . . . *Bilimekia,* gen. nov.

C. Corium with three long veins proceeding from the base, straight, elongate, and parallel, the outer or radial vein being situated at about an equal distance from the costa and the first ulnar vein; basal area usually uninterrupted before middle, but occasionally divided by transverse venules; open space of the tegmina divided by the claval suture large or very large.

a. Pronotum with the shoulders not or only very slightly produced.

*a**. Metopidium oblique; pronotum with a porrect process in front, its upper surface level with the dorsum; facies of a small *Polyglypta* . . . . . *Polyglyptodes,* gen. nov.

*b**. Metopidium perpendicular or almost perpendicular.

a†. Pronotum with the dorsum compressed and more or less acute, deeply notched, if viewed from the side . *Entylia,* Burm.

b†. Pronotum elevated and more or less rounded, convex, not acute, carinate, or notched.

a‡. Corium with two discoidal areas; dorsum broadly and slightly depressed, either quite rounded in

front, or produced into a frontal somewhat recurved horn or process . . . . . *Publilia,* Stål.

b‡. Corium without discoidal area; dorsum quite rounded . . . . . *Adippe,* Stål.

c†. Pronotum less elevated, with the dorsum not rounded, broadly but distinctly sinuate in the middle, and somewhat elongate, produced into a very gradual and somewhat long process behind; front quite rounded or furnished above the metopidium with a very short prominence; tegmina with two discoidal areas . . *Metheisa,* gen. nov.

b. Pronotum with the shoulders strongly produced at the sides, pointed or subauriculate.

*a**. Dorsum elevated into a strong, sharp, abrupt point before the metopidium . . . . . *Oxygonia,* Fairm. §

*b**. Dorsum elevated into an obtuse point before the metopidium, which is abruptly declivous in front, and behind gradually slopes into the posterior process . . *Hille,* Stål. §

D. Corium with three veins proceeding from or from near the base, which are more separated and much less parallel, with the radial vein approaching nearer to the costa than to the first ulnar vein; open space of the tegmina divided by the claval suture comparatively small.

a. Shoulders of pronotum strongly produced at the sides; dorsum much compressed and elevated, strongly and evenly carinate . . . . . *Antianthe,* nom. nov. ‖ (*Janthe,* Stål). p. 137

b. Shoulders of pronotum not or scarcely perceptibly produced at the sides.

*a**. Dorsum broad and convex.

a†. Tegmina with one discoidal area; basal area not interrupted before the middle . . . . . *Godingia,* gen. nov.

b†. Tegmina with two discoidal areas; one small ovate basal area present before the middle . . . . . *Ophiderma,* Fairm.

*b**. Dorsum moderately compressed at the sides, convex in front, highest about the middle, less elevated. *Cyrtolobus,* Goding (*Cyrtosia,* Fitch).

*c**. Dorsum strongly compressed at the sides, highest in front, more elevated . . . . . *Atymna,* Stål.

2. Wings with the apical area triangular, not truncate at the base, with its apex resting on the second basal area, or very shortly stylate; tegmina with three subparallel veins proceeding from

---

§ These genera are imperfectly defined at present and need revision. Stål separates them on the presence of a single discoidal area on the corium in *Hille*, while *Oxygonia* has none; but this does not hold good in all cases.

‖ A new name is substituted for this genus, *Janthe* being preoccupied in Coleoptera (Marseul, 1865).

	the base, the basal areas elongate, the third extremely narrow; size very small; facies of a small *Hypamastris*	*Aphetea*, gen. nov. p 94
3.	Wings with the apical area sessile, truncate at the base; dorsum with a strong protuberance; size large	*Telamona*, Fitch. p. 143

PARMULA.

Entylia, Burmeister, Rev. Ent. Silb. iv. p. 181, t. 36. figg. 8, 9 (1833) (ad partem, in error.).
Parmula, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 490 (1846); Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 29.

The members of this genus are oblong insects, which vary considerably in colour and punctuation; about half a dozen have been described from South America, but none hitherto from Central America. They may easily be known by the formation of the tegmina, which are strongly and irregularly variegated, with large veins and very irregular areas, the area at the extreme apex being small, almost semicircular, and stylate; the margins are fairly broad, but very much narrower than in *Tragopa*.

1. **Parmula dispar.**

Darnis dispar, Fabr. Syst. Rhyng. p. 32[1].
Entylia dispar, Burm. Rev. Ent. Silb. iv. p. 182[2].
Parmula dispar, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 29[3].

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA[1 3], Pará[2].

This is an extremely variable species as regards colour; the following are the chief varieties in our series:—

a. Bright red, with head, metopidium, and apex of pronotum black.
b. Like the preceding, but with a black band across the middle of the pronotum, and with the central part only of the metopidium black.
c. Orange, with the apex only of the pronotum black.
d. Deep black, with a yellow band just behind the middle.
e. Like the preceding, but with two yellow spots at the shoulders, and the median band divided.
f. Yellow, with the head, apex of pronotum, a broad band in the middle, and a broad band joining this with the head, black.
g. Deep black, unicolorous.

2. **Parmula reticulata.**

Darnis reticulata, Fabr. Syst. Rhyng. p. 29[1].
Parmula reticulata, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 30[2].
Darnis interrupta, Fabr. Syst. Rhyng. p. 31[3].
Parmula bistrigata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 491[4].

Hab. PANAMA, Bugaba, Volcan de Chiriqui, David, Tolé (*Champion*).—SOUTH AMERICA[1 2 3], Colombia[4].

This species is also very variable in colour, but the colours are much more sombre, varying from black to brown, with a small oblique, sometimes straight, light stripe on each side behind the middle, touching, or nearly touching, the margins, and often with the central portion of the prothorax from the front of the metopidium to the middle, or sometimes almost to the apex, broadly testaceous, the testaceous colour occasionally prevailing; the upper surface is shiny and rather strongly pubescent, and somewhat variably, but as a rule distinctly, and more or less strongly punctured.

I have had some difficulty in identifying the above, and cannot be sure whether I am right, as I have not seen types, and Stål's description of the species (*l. c.* p. 30) is somewhat misleading. Fairmaire (*l. c. suprà*, t. 7. fig. 10) figures an insect as *Horiola biguttata*, which evidently belongs to this or the succeeding species; he does not, however, notice this insect in the text, but on p. 491 he describes a species as *Parmula bistrigata* which evidently fits the figure, and the description corresponds to the insect here noticed as belonging to *P. reticulata*, which Stål regards as synonymous with *P. bistrigata*. On the same plate Fairmaire figures a species as *Holiola* (sic) *gibbula* which he describes in the text as *Parmula gibbula*, so that it is almost certain that he has made a second mistake, and that the names *Horiola biguttata* and *Parmula bistrigata* refer to one and the same species.

3. **Parmula distinguenda,** sp. n. (Tab. VI. figg. 21, 21 *a*, *b*.)

Præcedenti affinis, sed major, minus nitida, multo densius subrugose punctata; capite pronotoque nigris, illo marginibus plerumque peranguste albidis, hoc ad humeros anguste albo-marginato, vittâ albidâ, transversâ, haud obliquâ, utrinque ad marginem, sæpe in dorso confluente; corpore subtus pedibusque fuscis.

Allied to the preceding, but larger and more elongate and parallel, and much duller, very closely and subrugosely punctured, and, as a rule, scarcely shining; head rather large, usually very narrowly margined with white; the margins of the pronotum at the shoulders are also narrowly bordered with the same colour, and just behind the middle there is a straight white band stretching right across from side to side, which is sometimes broken, and forms two shorter bands extending from the margins; central line rather distinct; underside and legs fuscous.

Long. 5 millim.; lat. int. hum. 2 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); British Honduras, R. Hondo, R. Sarstoon (*Blancaneaux*); Guatemala, Panima, Teleman, and Cubilguitz in Vera Paz (*Champion*).

The examples of this species are much more uniform in colour than those belonging to *P. reticulata*, and the size, shape, and sculpture will serve to distinguish them. We figure a specimen from the River Sarstoon, British Honduras.

4. **Parmula prominens.**

Tragopa prominens, Walk. List of Homopt. Ins., Suppl. p. 151[1].

Hab. Panama, Caldera in Chiriqui 1200 feet (*Champion*).—Amazons, Santarem [1].

One specimen. Allied to the two preceding, but stouter and broader, unicolorous black, dull, and very closely, rugosely sculptured, with the head red, very large and porrect, with the front margin broadly reflexed and concave; the species is very distinct and ought, perhaps, to be referred to a separate genus, but it has nothing to do with *Tragopa*, and in facies is certainly a *Parmula*.

AMASTRIS.

Amastris, Stål, Kongl. Sv. Vet.-Ak. Handl. iii. Häft. 2, p. 29 (1860); Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 553 (1867); Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 25 (1869).

The members of this genus, according to Stål, are characterized by the fact that the corium has three discoidal areas, and that the apical area is transverse and stylate and subtruncate at the apex, and that the thorax is moderately elevated, and the dorsum, if viewed from the side, is rounded, acute, and compressed; this definition, however, necessitates the removal of several of the species which have been placed under *Amastris* to a fresh genus, as below described.

1. **Amastris obtegens.** (Tab. VI. figg. 22, 22 *a*, *b*.)

Membracis obtegens, Fabr. Syst. Rhyng. p. 11 (1803) [1].
Amastris obtegens, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 25 (1869) [2].

Hab. Mexico, Atoyac in Vera Cruz (*Schumann*); Panama, Caldera in Chiriqui (*Champion*).—South America [1] [2].

This is a small unicolorous green species, with the tegmina entirely hyaline, with testaceous veins; the pronotum, if viewed from the side, is almost semicircular. *A. simillima* is a closely allied species, but is more or less sinuate and depressed in front, if viewed sideways, and not nearly so evenly rounded. Stål has left the genus in considerable confusion, for he characterizes five new species as forming a distinct group in his synopsis [2], without attempting to name or further characterize them. A specimen from Atoyac is figured.

HYPAMASTRIS, gen. nov.

Genus præcedenti affine, sed dorso depresso haud compresso-carinato, tegminibus plus minusve infuscatis, venis crassioribus, apiceque pronoti obtusiori apice tegminum distincte breviori, distinguendus.

Allied to *Amastris*, but with the dorsum depressed and not compresso-carinate, and in some cases almost flat, and with the tegmina more or less infuscate, and apparently almost coriaceous in parts, with the veins very thick and coloured as the prothorax; the areas of the tegmina appear more irregular, and the apical area is nearly semicircular, and occupies the whole apex of the tegmina, the style bisecting the base of the segment formed by it.

The species belonging to this genus are all small, varying from about 3–5 millim. in length; they are allied to *Hygris*, Stål, but in the latter genus the corium has only two discoidal areas.

1. **Hypamastris segmentata,** sp. n. (Tab. VI. figg. 23, 23 *a*, *b*.)

Sat lata, capite testaceo, pronoto leviter distincte punctato, sparsim pubescente, antice testaceo, postice fusco-brunneo, ad apicem interdum testaceo, vel maculâ aut vittâ albidâ mox ante apicem, et maculâ semicirculari obscuriori utrinque ad marginem laterum arcu albido plus minusve distinctâ (nonnunquam deficienti) limitatâ; dorso a latere viso leviter rotundato, vix sinuato, post medium impresso; tegminibus hyalinis, plus minusve infuscatis, maculâ infuscatâ ad apicem, venis magnis brunneis; corpore subtus et pedibus testaceis unicoloribus vel ad partem fuscis.

A broad and stout species, with the head and front part of the pronotum testaceous, the latter being dark behind, the change of colour being often gradual; at each side there is a dark semicircular patch usually bounded by a whitish arc, and there is usually a whitish vitta or patch before the apex, which is often obscurely testaceous; the pronotum is very closely and distinctly punctured, and evidently, though sparsely, pubescent, and is strongly impressed at the sides behind the middle; the tegmina, as well as the pronotum, vary in colour in different specimens, but are always more or less infuscate, and have an infuscate patch on the apical margin; legs and underside testaceous, sometimes partly infuscate.

Long. 4–5 millim.; lat. int. hum. 2–2½ millim.

Hab. MEXICO, Chilpancingo in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, El Tumbador, San Isidro (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

The colour of this species varies considerably, and some of the lighter specimens are almost unicolorous, but the darker arc at the side is almost always plainly traceable. Among the specimens from Teapa there is one variety with the ground-colour greyish, the dark markings of the pronotum very distinct, the sides of the body black, and the legs light testaceous. The specimen figured is from Teapa.

2. **Hypamastris minor,** sp. n.

Minor, isabellina, minute griseo-marmorata, humeris testaceis; tegminibus hyalinis, fusco maculatis, venis distincte fuscis; pedibus testaceis.

Considerably smaller than the preceding, of a dark fuscous or fuscous-brown colour, minutely marbled with greyish-brown, and with a minute obscure whitish spot on the central line behind the middle (sometimes absent) of the pronotum, and a small inconspicuous whitish band before the apex; tegmina more or less broadly infuscate, with the veins thick and dark; abdomen infuscate; legs testaceous.

Long. 3½–4 millim.; lat. 2 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

A small series.

3. **Hypamastris albifrons,** sp. n. (Tab. VI. figg. 24, 24 *a*.)

Oblonga, depressa, magis parallela, fortius præcipue ad latera, punctata; capite metopidioque ad medium albidis purpureo-lineatis; pronoto fusco-purpureo, carina centrali rufescenti, apice truncato; dorso a latere viso fere recto, pone medium late leviter impresso; tegminibus hyalinis, venis maximis, irregularibus, fuscis, margine apicali fuscatâ; corpore subtus pedibusque obscuris.

Oblong, depressed, subparallel, with the sides very gradually narrowed to the apex of the pronotum, which is very blunt and truncate; head and the centre of the metopidium whitish, with longitudinal purple lines; pronotum of a fuscous-purple colour, with the central raised line reddish; dorsal surface almost flat, slightly but distinctly impressed on each side behind the middle; tegmina hyaline, with only the apical margin and the veins, which are very conspicuous, infuscate; underside and legs dark.

Long. 5 millim.; lat. int. hum. 2½ millim.

Hab. GUATEMALA, San Gerónimo 3000 feet (*Champion*).

Dr. Goding informs me that this species is very near his *Amastris ståli*, and it may, perhaps, eventually prove to be a variety of that insect; I have not, however, had an opportunity of examining the type.

4. **Hypamastris brunnea,** sp. n.

Brunnea, unicolor; capite antice obtuso producto, sæpius fusco-notato; pronoto notis fuscis in metopidio supra oculos, quoad cetera unicolori, dense sat fortiter punctato, humeris prominulis, carinâ centrali distinctâ; tegminibus hyalinis, venis et margine externâ testaceo-brunneis, apice haud infuscato; capite subtus fusco; pedibus brunneis, ad partem infuscatis.

Unicolorous brown, with the head obtusely produced, and the pronotum thickly and rather strongly punctured, with the shoulders slightly prominent, and the central keel distinct; dorsum slightly uneven if viewed from the side; tegmina hyaline, not infuscate at the apex, with the veins and the external margin testaceous-brown, but with the apex not fuscous; legs brown, the tarsi, the upper part of the femora, and the apex of the tibiæ more or less fuscous.

Long. cum tegm. 6 millim.; lat. 3 millim.

Hab. MEXICO, Oaxaca (*Mus. Brit.*: ♀).

This species is allied to *H. segmentata*, but is larger, and, apart from other differences, may be known by the absence of the darker segment of colour at the sides.

5. **Hypamastris variegata,** sp. n.

Nigra vel purpureo-nigra, albido variegata; capite leviter producto, albido, punctis et notis nigris; pronoto albido, distincte sat fortiter punctato, punctis nigris, maculâ magnâ in medio constrictâ majorem partem dorsi occupante, deinde vittâ albidâ ante apicem, apice ipso nigro; tegminibus venis fuscis, margine externâ testaceâ; abdomine pedibusque nigris, albido variegatis.

Of a black or purplish-black colour, variegated with white; head not so strongly produced as in *H. brunnea*, white, with dark punctures and dark markings at the sides; metopidium with dark markings over the eyes; the ground-colour of the pronotum is white, the punctuation, which is distinct and rather strong, being dark; a large dark marking, shaped like an hour-glass, occupies most of the dorsum, behind which before the apex is a white band, the apex itself being dark; tegmina with the veins fuscous and the external margin testaceous; legs and underside dark, variegated with white.

Long. cum tegm. 6 millim.; lat. int. hum. $2\frac{3}{4}$ millim.

Hab. MEXICO, Oaxaca (*Mus. Brit.*: ♂).

APHETEA, gen. nov.

Brevis, lata, humeris obtuse prominulis, pronoto ad apicem sensim acuminato, haud nitido, dense punctato, dorso a latere viso vix sinuato, apice obtuso; tegminibus areis apicalibus quinque, areâ centrali basali angustissimâ, apice sensim dilatato; alis areis apicalibus tribus magnis, discoidali nullâ distinctâ; pedibus sat robustis, externe canaliculatis.

Form short and broad, with the shoulders obtusely prominent, and the pronotum shield-shaped, gradually narrowed to the apex; tegmina with five apical areas, which radiate regularly from the slightly dilated end of the very narrow central basal area; the latter appears to be sometimes divided, but the point is not quite apparent; wings with three large apical areas and no discoidal area; legs rather stout, extremely deeply channelled.

The position of this genus is very doubtful, but it seems to be allied to *Horiola*,

Acutalis, and *Hypamastris*; the formation of the tegmina, however, appears to be different from that of any other genus which I have examined.

1. **Aphetea inconspicua**, sp. n. (Tab. VI. figg. 25, 25 *a*, ♂; 26, 26 *a*, ♀.)

Brevis, lata, fusca vel fusco-brunnea; pronoto dense punctato, vittâ obscurâ albidâ vel testaceâ mox ante apicem, apice obtuso, fusco vel fusco-testaceo; tegminibus intus hyalinis, extus brunneis, punctatis, testaceo-variegatis, venis distinctis brunneis; pedibus nigris vel brunneis.

A short, broad, inconspicuous species, with the pronotum fuscous or fuscous-brown, closely and distinctly punctured, not shining, with an obscure light band just before the apex, and the apex obtuse, unicolorous, or obscurely testaceous; tegmina internally hyaline, externally towards the base opaque, strongly punctured, brown, variegated with testaceous, veins distinct, brown; legs black or brownish.

Long. 3–3½ millim.; lat. int. hum. 2–2½ millim.

Hab. GUATEMALA, Chacoj and Cahabon in Vera Paz (*Champion*).

A female from Chacoj and a male from Cahabon; the latter is considerably smaller and narrower, and of a darker, more uniform colour, and it is possible that it may belong to a separate species.

CLEPSYDRIUS, gen. nov.

Sat brevis, robustus; capite magno, antice quadratim producto, ocellis distinctis, inter se ac ab oculis fere æque distantibus, his magnis, prominulis; pronoto gibboso, antice ampliato, humeris prominulis impressione forti longitudinali a metopidio separatis, pone medium fortiter constricto, utrinque fortissime impresso, lateribus sub impressionibus supra visis subtriangulariter dilatatis, deinde ampliato, lato, globoso, convexo, apice lato, truncato, trispinoso; tegminibus venis crassis, corio unâ venâ a basi procedente mox in aream ovalem extensâ, deinde areis discoidalibus tribus irregularibus, apicalibus quinque instructo; alis areis apicalibus quatuor, secundâ stylatâ; pedibus posticis prælongis.

Oblong; head large, produced in front, ocelli very distinct, situated on a line drawn through the centre of the eyes, a very little nearer to each other than to the eyes, which are large and prominent; pronotum convex and gibbous, very strongly impressed at the sides (if viewed from above it appears wide in front, with the shoulders obtusely prominent, and is then gradually narrowed above the impression in a straight line to behind the middle, where it is constricted, and then strongly widened into a convex and globose lobe, which at its widest is about as broad as the prominent shoulders), the apex truncate, and bearing three spines, of which the two side ones are slender, short, and slightly deflexed; the central spine is probably longer, but is broken in the type specimen; on either side of the constricted portion of the dorsum below the impressed portion there is a broad subtriangular prominence; corium with one vein proceeding from the base, which is dilated into an oval area at a little distance from the base, and is followed by three irregular discoidal and five apical areas, the extreme area occupying the whole apex, and being almost semicircular, veins incrassate and more or less arcuate; clavus with only the external vein; wings with four apical areas, the second plainly stylate; posterior legs very long.

This genus is extremely difficult to locate; in the formation of the pronotum it is closely related to *Parantonaë*, but in the venation of the tegmina it approaches very nearly to *Hypamastris*, and it must probably be placed near the latter genus.

1. **Clepsydrius constrictus**, sp. n. (Tab. VII. figg. 1, 1 *a–c*.)

Niger, nitidus, capite inæquali, pronoto sat fortiter subrugosius punctato, lineâ centrali lævi per totum percurrente; spinis apicalibus ad basin testaceis; pedibus anticis et intermediis testaceis, basi tibiarum

et femoribus nigricantibus; pedibus posticis, tarsis apiceque tibiarum exceptis, nigris, ungulis nigris; abdomine nigro, apicibus segmentorum testaceis; tegminibus hyalinis, basi extremâ, maculâque parvâ mediâ, venisque incrassatis, nigricantibus.

Shining black, ocelli and eyes whitish, pronotum closely and very distinctly punctured, with a smooth central line throughout its length, apical spines testaceous at the base; anterior and intermediate pairs of legs testaceous, with the base of the tibiæ and the femora dark, the posterior pair very long, with the femora and tibiæ, except a broad ring just before the apex, dark; abdomen dark, with the segments testaceous at apex; tegmina reaching considerably beyond the apex of the pronctum, vitreous-hyaline, with the extreme base, a spot covering a portion of the interior discoidal area, and the thickened veins, black or fuscous; wings with the veins dark towards the apex, light and scarcely traceable behind.
Long. cum tegm. $4\frac{1}{2}$ millim.; lat. int. hum. 2 millim.

Hab. Mexico, La Venta in Guerrero (*H. H. Smith*).

One male specimen. As above stated, the central spine of the apex of the pronotum is broken; this is not apparent at first sight, as it looks merely rudimentary, but when examined under a compound microscope the fracture is evident; the spine is probably longer than the two lateral spines.

CYPHONIA.

Cyphonia, Laporte, Ann. Soc. Ent. Fr. i. p. 230 (1832) (part.); Amyot et Serville, Hist. Nat. des Ins., Hémipt. p. 548 (1843); Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 551 (1867).

As originally constituted, *Cyphonia* would now contain a considerable number of species, chiefly from Brazil or Central America. Stål, however, rightly divides the genus, but has assigned his new name *Poppea* to the largest division of it. The genus *Cyphonia*, which includes the well-known *Cyphonia clavata* and certain allied species, is chiefly distinguished by the presence of two upright intermediate blunt spines on the back of the pronotum, which are entirely wanting in *Poppea*. These insects are amongst the strangest and most abnormal of the Homoptera; in the venation of the tegmina they are allied to *Ceresa*, but they have a perfectly distinct facies.

1. **Cyphonia clavata.** (Tab. VII. figg. 2, 2 *a*.)

Membracis clavata, Fabr. Ent. Syst. iv. p. 13[1].
Combophora clavata, Germ. Rev. Ent. Silb. i. p. 230[2].
Cyphonia clavata, Am. et Serv. Hist. Nat. des Ins., Hémipt. p. 548[3]; Butl. Cist. Ent. ii. p. 213[4].
Membracis bulbifera, Germ. Mag. Ent. iv. p. 30[5].
De Kogel-Draagster (*La Cigale Porte-boulet*), Stoll, Cig. i. p. 82, t. 21. fig. 115[6].

Hab. Mexico, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); Guatemala, Mirandilla (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba and David in Chiriqui (*Champion*).—South America, Cayenne[1 3], Surinam[6], Brazil[2 4].

This insect is probably widely distributed throughout Tropical America. A specimen from Bugaba is figured.

2. **Cyphonia proxima.**

Bocydium (*Combophora*) *proximum,* Guér. Icon. Règne Anim., Ins. p. 365, t. 59. fig. 3[1].
Cyphonia proxima, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 502[2]; Butl. Cist. Ent. ii. p. 212[3].

Hab. Mexico[1 2].—Amazons, Ega and Pará[3].

This species is not, apparently, represented in our collection. It is placed by Fairmaire under his Division I. of the genus, characterized by having the "posterior spines slender and cylindrical."

POPPEA.

Poppea, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 551 (1867).

This genus contains about thirty species, chiefly from Brazil or Central America, and is probably widely distributed throughout the intervening region. It is allied to *Ceresa* in the form of the frontal pronotal horns, and in the venation of the tegmina and wings, but the back of the pronotum is rounded and strongly contracted in the middle on its upper surface, and from the middle or a little behind the middle starts a long trifurcate process, the central spine being, as a rule, much longer than the lateral ones *; between the pronotal horns and the trifurcate process there are no raised curved spines as in *Cyphonia.*

It is very difficult to describe the differences between the species, as they are in most cases more or less relative, but they will be easily seen by referring to the figures which have been, in most cases, given; they are evidently scarce insects, as the species are only represented from several localities by from one to four specimens.

1. **Poppea setosa,** sp. n. (Tab. VII. figg. 3, 3 *a–c.*)

Testacea, nigro testaceoque hirta; capite inæquali, punctis duobus subter oculos nigris, pronoto a latere viso in medio transversim canaliculato et utrinque valde rotundato-elevato, fortiter remote punctato; cornibus anticis brevibus, fere horizontalibus, ad basin inflatis, processu trispinoso postico spinâ mediâ tereti curvatâ, lateribus duplo longiori, his brevibus, apice excepto, crassis et inflatis; corpore subtus testaceo, plus minusve infuscato; pedibus dilute testaceis, maculis quibusdam parvis nigricantibus.

Of an ochraceo-testaceous colour, clothed with long setæ, partly black and partly testaceous, which are thickest on the metopidium; the head is uneven, with large ocelli, and the pronotum also is very uneven, presenting the appearance, if viewed from the side, of two large rounded humps with a deep channel between; the anterior of these humps is excavate in front, and encloses a raised punctured prominence between the base of the horns, which are short, almost horizontal (being very slightly bent backwards), and inflated at the base; the trispinose posterior process has the intermediate spine long and slender (if viewed from the side rather strongly curved downwards, and then at the extreme apex almost imperceptibly curved upwards), twice as long as the lateral spines, which are short and very strongly dilated, except for a short pointed apex; the horns and spines are all lighter before their extreme tips, which are darker,

---

* In the descriptions the trifurcate process is regarded as including the rather broad crescent-shaped piece from which the spines proceed; this piece and the spines are, of course, an integral part of the pronotum.

In all the species I have seen the tegmina have the veins in part dark and in part testaceous.

and sometimes quite pitchy; the abdomen usually has the base of the segments pitchy; the legs are light testaceous, with three or four small black spots or rings on the femora and tibiæ, the apex of the latter being usually black.

Long. 6–7 millim.; lat. int. corn. 3 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Several specimens. This insect appears to be assigned by some writers to Germar's *Heteronota hirta* (Germ. Rev. Ent. Silb. iii. p. 255), from Brazil; but it is plain from Germar's description, which is a very full one and very different from the extremely meagre description of many of the authors who wrote about the same time, that it cannot be his insect, which appears to belong to *Cyphonia* proper: for, after speaking of the "cornua antica," he says "Spinæ intermediæ, breviusculæ, erectæ," whereas in the present insect there are no such erect spines; that he does not refer to the posterior spines is evident, for he describes these in detail just afterwards; there are also other differences. The insects in the British Museum under *Cyphonia hirta* belong to *P. setosa*.

Among some undescribed Mexican Membracidæ sent to me by Dr. Aurivillius, from the Stockholm Museum, is a smaller and more rugose form, which may perhaps belong to a new species; but it is imperfect, having the intermediate spine of the posterior process broken.

Since writing the above I have examined a specimen of *C. hirta* in the Belgian Museum collection; it is a true *Cyphonia* with upright intermediate spines, and quite distinct from the insect above described. *Heteronota braccata*, Germ., is also a true *Cyphonia*, and not a *Poppea*.

2. **Poppea torva**, sp. n. (Tab. VII. figg. 4, 4 *a*, *b*.)

Præcedenti quoad formam pronoti maxime affinis, sed statura multo majori, metopidio ante cornua longiori, magis rotundato, et colore obscuriori facile distinguenda.

Allied to the preceding in the form of the pronotum, except that the metopidium is more produced and rounded, but much larger and more darkly coloured; the horns, too, are shorter in proportion; the pronotum is brown, with the sides lighter, and with small obscure testaceous spots scattered over the general dark colour; the horns and spines are also testaceous before the apex, the intermediate spine being almost entirely testaceous, with an obscure dark band in the middle; the horns are short, inflated at the base, sharp at the apex, and slightly recurved; metopidium with rather thick light setæ, which are more or less present on the rest of the pronotum; pronotum rather coarsely and remotely punctured, uneven, deeply channelled in the middle if viewed from the side, posterior trispinose process inflated, with the intermediate spine moderately long, and the two side ones very short beyond the inflated portion; body dark, with the apex of the segments testaceous; legs testaceous, with the apex of the posterior tibiæ and a spot before their base, and the upper part of the femora in part, dark.

Long. 9 millim.; lat. int. corn. 4 millim.

Hab. GUATEMALA, Las Mercedes 3000 feet (*Champion*).

One specimen.

3. **Poppea subrugosa,** sp. n. (Tab. VII. figg. 5, 5 *a*, *b*.)

Sat robusta, pronoto nigro vel nigro-brunneo, vittis ante apicem spinarum postici processus testaceis, cornibus brevibus fere recte exstantibus, vix curvatis, fortiter, profunde, et (præcipue ad latera) subrugose punctato, dorso a latere viso in medio sinuato, haud excavato; processu trispinoso crasso, spinâ mediâ tereti, lateralibus multo longiori, his brevibus, apice excepto incrassatis et inflatis; corpore plus minusve obscuro, apice segmentorum testaceo; pedibus testaceis, femoribus tibiisque ad partem obscuris.

A rather stout and robust species, with the pronotum black (in immature specimens more or less brown), with the usual testaceous bands before the apex of the spines of the posterior process; the metopidium projects distinctly beyond the anterior horns, which are short, stout at the base, and almost horizontal, being only very slightly recurved; the pronotum is strongly, deeply, and subrugosely punctured, especially at the sides (if viewed from the side, the back is only sinuate in the middle, and not excavated or deeply channelled as in the two preceding species); the trispinose posterior process is thick, with the central spine slender, and the lateral spines short and incrassate, and with only a short slender point at the apex; the body is dark, with the apex of the segments testaceous; legs testaceous, with the greater part of the femora, and the apex and base of the posterior tibiæ, dark.

Long. $7\frac{1}{2}$ millim.; lat. int. corn. 3 millim.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

The type specimen has the pronotum shining black; in a second specimen from the same locality, which appears to belong to the same species, it is brown with the horns and posterior process darker, and the legs lighter.

4. **Poppea rectispina.**

Cyphonia rectispina, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 502[1].

Hab. MEXICO[1] (*Sallé*); GUATEMALA, San Juan in Vera Paz, Cerro Zunil 4000 to 5000 feet (*Champion*).

This species may easily be known by its large size, the almost glabrous disc of the pronotum, the uniform dark orange-testaceous colour, and the nearly straight lateral spines of the posterior process.

There is a broken specimen from Sabo, Vera Paz (*Champion*), in our collection, which apparently belongs to a new species, closely allied to *P. rectispina*, but with the posterior process quite different; as, however, the pronotal horns are wanting, it cannot be described.

5. **Poppea capricornis,** sp. n. (Tab. VII. figg. 6, 6 *a*, *b*.)

Rufa, testaceo-variegata, cornibus pronoti (saltem apicem versus) processuque postico trispinoso nigris vel nigro-rufis, spinis lateralibus ante apicem late testaceis, spinis intermediis vittis duabus testaceis; pronoto cornibus longis recurvis acutis, sed quoad curvationem nonnihil variantibus, parce nigro-setoso, punctis magnis quibusdam remotioribus præcipue ad latera instructo; corpore subtus testaceo ad partem nigricanti; pedibus pallidis, apice et aliquando vittâ ante basin tibiarum obscurioribus.

Rufous, more or less distinctly variegated with testaceous, with the horns of the pronotum, at all events towards the apex, black; the trispinose process has the lateral spines almost parallel with the intermediate spine—it is black with the lateral spines broadly testaceous before the apex, and the intermediate spine furnished with two testaceous bands, the hinder one being sometimes indistinct; the horns of the pronotum are long and recurved, but vary a little in direction; the pronotum is smooth and shining, with

a few large shallow scattered punctures, which are thicker at the sides; body testaceous, in part black; legs pale, with the apex of the tibiæ and a more or less distinct ring before their apex, sometimes wanting, brown or blackish.

Long. 7 millim.; lat. int. corn. 4 millim.

Hab. PANAMA, Bugaba (*Champion*).

Several specimens.

6. **Poppea concinna,** sp. n. (Tab. VII. figg. 7, 7 *a*, *b*.)

Pallide testacea, parce nigro-setosa, pronoto fere impunctato, cornibus longioribus recurvis, acutis, nigris, dorso lineis duabus nigris, plus minusve distinctis, a basi cornuum procedentibus ad medium convergentibus, processu trispinoso postice anguste nigro, spinis ad basin nigris, deinde testaceis, ad apicem nigris; corpore antice nigro, postice testaceo, subtus plus minusve nigro; pedibus pallidis, apice tibiarum tibiisque ad partem nigris.

Of a very pale testaceous colour, with long black setæ, which are sparingly distributed, but thicker on the metopidium; pronotum almost smooth, with a few scattered large shallow punctures; horns rather long, acute, recurved, black; from their base proceed two dark lines, sometimes indistinct, which converge towards the middle of the raised part of the pronotum; the trispinose process has the front crescent-shaped smooth part pale, with the hinder margin black, the black colour spreading down part of the spines, which, however, are more or less broadly testaceous before the apex, which is black; body black in front, pale testaceous behind, with part of the underside black; legs pale testaceous, apex of the tibiæ, and more or less of the tarsi, black.

Long. 8 millim.; lat. int. corn. 4 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

In the specimen from the Volcan de Chiriqui, which is the one figured, the lateral spines of the posterior process of the pronotum are a little straighter and more divergent than in the example from Bugaba, but the difference is very slight.

7. **Poppea affinis,** sp. n. (Tab. VII. figg. 8, 8 *a*, *b*.)

P. rectispinæ affinis, sed multo minor, rufa, testaceo-variegata; cornibus pronoti et processu trispinoso obscurioribus; hujus spinis lateralibus rectis, exstantibus, maxime divergentibus, ad apicem vix recurvatis; corpore pedibusque fere totis testaceis.

A small species, of about the same size, colour, and appearance as *P. munda*, which it resembles in the shape of the horns; in the formation of the trispinose process of the pronotum, however, it is closely allied to *P. rectispina*, having the lateral spines almost straight and very divergent, not curved at the base and then almost parallel to the intermediate spine as in *P. capricornis*, &c.; the horns and spines are darker than the rest of the pronotum, except for the usual testaceous markings before the apex of the latter; body entirely or almost entirely testaceous; legs pale, with small obscure dark markings at the base of the tibiæ and at the apex of the femora.

Long. cum tegm. 6 millim.; lat. int. corn. 3 millim.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*).

One specimen. This little species is quite distinct from any *Poppea* I have seen, although in colour and general appearance it is very like several others, until it is more closely examined.

8. **Poppea munda,** sp. n. (Tab. VII. figg. 9, 9 *a*, *b*.)

Minor, rufa, testaceo-variegata, vel fere tota pallida, cornibus processuque trispinoso plus minusve nigricantibus, vel saltem obscurioribus; pronoto nitido, punctis remotioribus; cornibus acutis, recurvis, spinâ intermediâ processus postici elongatâ acutâ, spinis lateralibus multo brevioribus, fortiter recurvis; corpore toto pallido; pedibus pallidis, tibiarum basi et femorum apice maculis quibusdam minutis obscuris.

A small species, very like *P. affinis* in colour and appearance, but with the lateral spines of the posterior process of the pronotum much curved, and not standing almost straight out as in that insect; the light bands before the apex of the posterior spines, which appear to be always present, are more obscure in this species than in some of the others, and in some specimens are almost wanting.

Long. cum tegm. 6 millim.; lat. int. corn. 3 millim.

Hab. PANAMA, Caldera in Chiriqui 1200 feet (*Champion*).

9. **Poppea reticulata,** sp. n.

Præcedenti affinis, sed longior, paullo angustior; cornibus pronoti magis recurvatis, et processu trispinoso spinis lateralibus longioribus angustiusque curvatis; sculpturâque pronoti leviter reticulatâ.

Very like the preceding, but narrower and of rather longer form, with the horns of the pronotum more curved, and the trispinose posterior process narrower in front, with the lateral spines longer and differently curved, the space between these and the intermediate spines being distinctly narrower, and the spines themselves being more parallel to the central spine; the sculpture of the pronotum is lightly, but distinctly, reticulate; the general colour is pale, with the horns and posterior process dark.

Long. $6\frac{1}{2}$ millim.; lat. int. corn. 3 millim.

Hab. GUATEMALA, Panajachel 5000 feet (*Champion*).

This species appears to be quite distinct from the preceding, but it must be admitted that there is a specimen from the Volcan de Chiriqui (*Champion*) in our collection which is somewhat intermediate, though it belongs to this species rather than to *P. munda*. I am inclined to think that it must be referred to another species, although, on the other hand, it is possible that all three may be varieties of the same species.

PARANTONAË, gen. nov.

Genus *Antonaë*, Stål, affine; capite inæquali, leviter striato, ocellis inter se quam ab oculis minus distantibus, his prominulis; pronoti antice angustiori, sine cornibus (parte anteriori in medio angulatâ, utrinque impressâ), ad medium fortiter constricto, deinde fortissime dilatato, globoso, spinâ unâ apicali instructo; tegminibus ut in *Antonaë*, Stål, reticulatis, areis apicalibus quinque, discoidalibus tribus.

Head uneven, with two small tubercles, finely striated; ocelli nearer to each other than to the eyes; pronotum without horns, strongly constricted, and divided into two distinct parts at the middle, where on each side there are two small lateral prominences, with the front part much the narrowest, obtusely angled in the middle, and the hinder part very strongly dilated, transversely globose, slightly elliptical, and terminated by a single spine; tegmina reticulate as in *Antonaë* and *Ceresa*, with five apical and three discoidal areas; legs slender.

This is a very strange-looking genus; it is closely related to *Antonaë*, but may at once be known by the general shape of the pronotum and the absence of frontal horns.

1. **Parantonaë dipteroides,** sp. n. (Tab. VII. figg. 10, 10 *a*.)

Nigra, nitida, sparsim nigro-pilosa, diffuse punctata, spinâ posteriori brevi, flavâ, apice extremo nigro; tegminibus testaceo-hyalinis, ad basin late brunneis, opacis; pedibus testaceis, femoribus tibiisque ad basin nigricantibus.

Head and pronotum black, shining; pronotum plainly but not thickly pilose, diffusely punctured, with the apical spine short, yellow, with the extreme apex black; tegmina testaceo-hyaline, broadly brown at the base; legs testaceous, with the femora and the base of the tibiæ more or less infuscate.

Long. $6\frac{1}{2}$, cum tegm. et spinâ apicali 8 millim.; lat. max. pronoti antice $2\frac{3}{4}$ millim.; id. postice $4\frac{1}{4}$ millim.

Hab. GUATEMALA, Aceytuno 5100 feet (*Salvin, in Mus. Brit.*).

This extraordinary species has the appearance of a large fly; in structure and colour it is allied to *Antonaë incrassata*, but it is very distinct from that species, and I have not seen any insect like it.

CERESA.

Ceresa, Amyot et Serville, Hist. Nat. des Ins., Hémipt. p. 539 (1843); Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 245 (1869).

The species belonging to this genus appear to be confined to America, and to range from as far north as Nova Scotia to Monte Video and Buenos Ayres; several have been described from the United States, and upwards of a dozen from Brazil. From thirty to forty species in all appear to have been recorded, some of which are very distinct, while others can scarcely be regarded as separate, and are very difficult to distinguish; several appear to have been described from single specimens on characters which are obviously variable, if a series is examined.

The species are distinguished by their reticulate tegmina, which are almost entirely exposed and have five apical and three discoidal areas, and by their general form, as well as by the elongate styles of the male.

The species may roughly be divided into two groups, in one of which the pronotal horns are slender and recurved, and in the other they are stouter, and not or scarcely recurved; there are, however, certain intermediate forms.

The most abundant member of the genus is *Ceresa bubalus* (Fabr.), which has a very wide range in North America, but does not occur further south than the United States; it has been recorded by Hellman and Riley as doing injury to potatoes (Am. Nat. xvi. pp. 822, 823). In Central and South America *C. bubalus* appears to be replaced by *C. vitulus*.

1. **Ceresa vitulus.**

Centrotus vitulus, Fabr. Syst. Rhyn. p. 20[1].
Ceresa vitulus, Am. et Serv. Hist. Nat. des Ins., Hémipt. p. 540[2].
Smilia pallens, Germ. Rev. Ent. Silb. iii. p. 235 (1835)[3].
Ceresa spinifera, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 284[4].
Ceresa curvilinea, Walk. List of Homopt. Ins., Suppl. p. 132[5].
Ceresa excisa, Walk. Insect. Saunders., Homopt. p. 68[6].

Hab. Mexico (*Bilimek*); Guatemala, El Reposo (*Champion*); Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—South America [3 6], Venezuela [5], Cayenne [2], Brazil [4], Rio Negro [5], Rio Janeiro.

This insect is variable in size and colour, being sometimes bright orange-testaceous and often greenish; the shape of the horns, too, is somewhat variable, but they are always sharp and recurved in the type-form.

Var. **minor.**

Minor, virescens, capite et metopidio ad partem flavo, carinâ dorsali cornibusque plus minusve rufis; cornibus interdum curtis, brevissimis.

Smaller, of a greenish tint, with the head and more or less of the metopidium yellow, and with the dorsal carina and the horns more or less red, occasionally testaceous.

Long. $5\frac{1}{2}$–$6\frac{1}{2}$ millim.; lat. int. corn. 3–4 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

A considerable series from Teapa, showing very little variation, and a small series from Yucatan, with the pronotal horns almost wanting in several specimens.

In the Vienna Museum there are three specimens labelled *C. vitulus*, which do not belong to that species, but are apparently small *C. testacea*; the description, as given by Germar, Fairmaire, and others, renders it plain that the real *C. vitulus* cannot belong to the *C. testacea*-group. Germar's description of *Smilia pallens*, which he quotes as identical with Fabricius's insect, is as follows:—"Testacea, stethidio antice convexo, utrinque in cornu horizontale apice reverso producto, dorso compresso, margine laterali lineolaque semicirculari albidis."

Among the insects in the Vienna Museum labelled "Coll. Signoret" are two specimens of a *Ceresa* from Mexico, labelled "*mexicana*, det. Stål" (apparently a MSS. name); they are very pale and rather strongly punctured, one having rather long recurved horns and the other scarcely any horns at all. In our collection there are two specimens which answer almost exactly to these, from Chilpancingo, Guerrero, and Cahabon, Vera Paz, respectively; both, however, appear to be forms of the var. *minor* of *C. vitulus*, which seems to be an extremely variable insect, and will probably be found to lead up to other species which have usually been regarded as distinct.

2. **Ceresa sallæi.**

Ceresa salléi, Stål, Stett. ent. Zeit. 1864, p. 70 [1].

Hab. Mexico (*coll. Signoret* [1], *in Mus. Vind. Cæs.*).

This species is like a large *C. vitulus*, with the pronotal horns longer and stouter in proportion; apart from its size, it might be classed with some of the forms of that insect; it has apparently been described on a single specimen.

3. **Ceresa nigricornis,** sp. n. (Tab. VII. figg. 11, 11 *a*.)

Griseo- vel virescenti-testacea, cornibus et carinâ dorsali et apice extremo pronoti nigris, et maculâ fuscâ utrinque ante apicalem processum; capite testaceo; pronoto nitido, haud dense punctato, cornibus acutis, sat longis, vix reflexis; tegminibus pedibusque dilute testaceis.

Allied to *C. vitulus*, but with the horns rather longer and straighter, and of a black colour, which is continued below to the margins of the pronotum, and above almost to the highest part of the dorsum, the dorsal carina and the extreme apex of the pronotum being black; just at the base of the apical process there is an indistinct fuscous spot, with a light patch just above it, and there are also some scattered whitish points on the disc, which are more evident in some specimens than in others; tegmina and legs testaceous.

Long. cum tegm. 8–9 millim.; lat. int. corn. 5 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Two males and two females.

4. **Ceresa nigrovittata,** sp. n. (Tab. VII. figg. 12, 12 *a*.)

C. vitulo affinis, sed major, et vittâ latâ nigrâ ante apicalem processum pronoti facile distinguenda, hâc vittâ supra subtusque maculâ testaceâ, et supra quibusdam aliis punctis testaceis instructâ; cornibus anticis acutis modice reflexis; tegminibus cum venis pallide testaceis; venis alarum fuscis; pedibus testaceis.

Allied to *C. vitulus*, but considerably larger than the average specimens of that species, and easily distinguished by having a broad black band just before the apical process of the pronotum, bounded above and below by a testaceous mark, and with a few small testaceous spots above, which are sometimes sprinkled over the whole dorsal portion; the tegmina and legs are testaceous; the general colour of the pronotum is more or less rufo-testaceous, but occasionally it is lighter, and sometimes there is a slight brown tinge.

Long. cum tegm. 9–10 millim.; lat. int. corn. 5 millim.

Hab. Guatemala, Sabo in Vera Paz (*Champion*).

Several specimens. This is a very distinct species. I have not seen *C. bifasciata*, Fairm., which is described as having a black marking at the apex, but that species appears to be about half the size of *C. nigrovittata* and to differ in other points.

5. **Ceresa uncicornis,** sp. n. (Tab. VII. figg. 13, 13 *a*.)

Læte rufescens, pronoto nitido, parce punctato, maculis quibusdam vel vittis testaceis, vittâ ante apicalem processum et apicali processu plerumque plus minusve distincte testaceo, apice extremo nigro; pronoti cornibus aculeatis, fortiter recurvis, nigris vel nigro-apicatis vel rufis; tegminibus testaceis, pedibus rufo-testaceis.

Of a bright rufescent colour, with testaceous streaks and markings, which in some specimens are very apparent and in others indistinct; there is a light patch just before the apical process, which is for the most part testaceous, with the extreme tip black; the light marking round the depressed part at the sides of the pronotum, which is characteristic of the group, is also more or less distinct; the chief character, however, lies in the horns, which are very aculeate and very strongly recurved; the tegmina are testaceous and very shining, and the legs rufo-testaceous.

Long. cum tegm. $10\frac{1}{2}$ millim.; lat. int. corn. 5 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 6000 feet (*Champion*).

This species is allied to *C. axillaris*, Fairm.; at first sight it looks very distinct, but it leads through an almost entirely rufescent variety into the next species, with which, except for the form of the horns, it is very closely connected.

6. **Ceresa variabilis,** sp. n.

Griseo-brunnea, vel griseo-testacea, vel rufo-testacea; pronoto nitido, parcius tenuiter punctato, cornibus modicis, sat obtusis, plus minusve recurvis, lineâ post humeros testaceâ semicirculari, nonnunquam deficiente, instructo; tegminibus cum colore pronoti congruentibus, venis fuscis; pedibus testaceis.

Very variable, of a greyish-brown, quite dark colour, or greyish-testaceous, or rufo-testaceous; the pronotum shining, sparingly and shallowly punctured, with the horns, as a rule, rather blunt and but slightly recurved, but variable; tegmina lighter or darker, according to the colour of the pronotum, but with the veins in almost every case fuscous.

Long. cum tegm. 8–9 millim.; lat. int. corn. 4–5 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Var. **intermedia.**

Multo minor, pronoto interdum fere lævi, interdum sat fortiter punctato, colore testaceo vel brunneo-testaceo.

Much smaller than the ordinary form, with the pronotum sometimes almost smooth, and sometimes rather strongly and closely punctured; colour brownish-testaceous or testaceous.

Long. cum tegm. 6 millim.; lat. int. corn. $3\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

The series which I have placed under this species has caused me more trouble than any other; it is quite possible that they may all be forms of *C. vitulus*, while on the other hand they might be described, if found separately, as half a dozen different species. The distinctly punctured specimens of the var. *intermedia* come exceedingly close to the var. *minor* of *C. vitulus*, whereas the larger rufescent forms are very nearly allied to *C. uncicornis*, which in facies is an entirely different insect from the last mentioned. The specimens from Bugaba are allied to *C. rufescens*, Butl., and the dark brownish specimens to *C. brunnicornis* (Germ.), but in either case they differ in important particulars, and are connected together by intermediate forms; moreover, they have nearly all been captured in one locality, and, to judge by the setting, at one particular time, as they are almost the only series in the group that are mounted on card. It appears therefore to be the best plan, in the present state of our knowledge, to leave them together, as the multiplication of species which are almost certainly not distinct has already caused considerable confusion.

7. **Ceresa testacea.**

Ceresa testacea, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 284[1].
Ceresa patruelis, Stål, Stett. ent. Zeit. 1864, p. 69[2].
Ceresa stålii, Butl. Cist. Ent. ii. p. 217, t. 3. fig. 11[3].

Hab. MEXICO (*coll. Signoret*[1]; *Mus. Brit.*[3]; *Boucard*; *Bilimek*), Chilpancingo, Rincon, Xucumanatlan, and Omilteme in Guerrero, Cuernavaca in Morelos, Teapa in Tabasco (*H. H. Smith*), Orizaba (*F. D. G. & H. H. S.*), Vera Cruz (*Mus. Holm.*[2]), Temax in North Yucatan (*Gaumer*); GUATEMALA, La Tinta, Chiacam, and San Gerónimo in Vera Paz (*Champion*); COSTA RICA (*Mus. Roy. Belg.*); PANAMA, Volcan de Chiriqui, Caldera, David (*Champion*).

There is a large series of this species in our collection; they vary considerably in size, width between tips of the horns, length and concavity of the metopidium, &c., but I can see no reason for separating them. Besides the names above mentioned as synonymous, I believe that *C. cavicornis*, Stål, *C. fastidiosa*, Fairm., and perhaps *C. alta*, Walk., belong to the same species, if the specimens in the British Museum are correctly named; these insects, however, have not hitherto been recorded from Central America. The specimens above referred to as from Temax, Yucatan, are intermediate between *C. alta* and the form *C. patruelis*; *C. alta*, moreover, which is described by Walker with no locality, appears to be closely allied to the North-American *C. taurina* and *C. constans*, Walk. I have Signoret's types before me, on which Fairmaire described *C. testacea*, and they vary considerably in the points above mentioned.

8. **Ceresa vacca,** sp. n. (Tab. VII. figg. 14, 14 *a*.)

Brunnea, indistincte nigro-maculata; pronoto parum nitido, fortiter dense subrugosius punctato, a latere viso dorso elevato et rotundato, utrinque, sed magis antice, abrupte declivi, processu apicali fere recto, acuto; fronte maxime excavatâ; metopidio lineâ mediâ testaceâ a capite usque ad apicem pronoti continuatâ; cornibus magnis, robustis, porrectis, recurvatis; tegminibus subrugosis, hyalinis, testaceo- vel flavo-maculatis; pedibus fusco-testaceis.

Of a brown colour, indistinctly marked with black; the pronotum comparatively dull, thickly, strongly, and in part rugosely punctured (if viewed from the side narrow, but with the highest part strongly elevated and rounded, and abruptly sloping on both sides, but especially in front), the apical process almost straight; forehead very strongly excavate; metopidium with a very narrow testaceous raised line which extends to the apex of the pronotum; horns very large, robust, porrect if viewed from the front, strongly recurved; tegmina with yellowish opaque spots on some of the areas; legs fusco-testaceous.

Long. cum tegm. 11, cum tegm. et corn. 12 millim.; lat. int. corn. 7 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One female specimen. This species appears to be very distinct; there is, however, one specimen in our collection, and another in the Stockholm Museum, which in some points resemble it as regards the horns, but they may be abnormal forms of *C. testacea*, although they might with reason be described as a separate species. Apart from the horns, however, the general shape of the pronotum in *C. vacca*, if viewed from the side, is different from that of any other *Ceresa* that I have come across. There is an ordinary female specimen of *C. testacea* in the collection from the same locality.

9. **Ceresa concinna,** sp. n. (Tab. VII. figg. 15, 15 *a*.)

Viridescenti-testacea, capite metopidioque supra caput flavis, cornibus pronoti, carinâ dorsali et lineâ mediali metopidii læte rufis; corpore toto supra punctis quibusdam dilutioribus asperso; pronoto distincte punctato, impressione laterali semicirculari conspicuâ; cornibus robustis, haud acutis vel recurvis; abdomine pedibusque dilute testaceis.

Of a greenish-testaceous colour, with the head and parts just above it orange-yellow, and with the horns of the pronotum, dorsal carina, and a central line continued from the apex of the dorsal line towards the head red, the whole being flecked with small light testaceous spots; pronotum distinctly punctured, with the

semicircular lateral impressions very plain; the horns are robust and not sharp and recurved, but formed as in the *C. testacea*-group; abdomen and legs light testaceous.

Long. cum tegm. 7 millim.; lat. int. corn. $3\frac{1}{4}$ millim.

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*), Vera Cruz (*H. H. Smith*).

One female from Vera Cruz, from which our figure is taken, and two males, both old and faded, in the Vienna Museum. This species, at first sight, resembles *C. vitulus*, var. *minor*, but is easily distinguished by the shape of the horns and the punctuation; it belongs to the second group of the genus, with the horns robust and not recurved.

There is a third specimen in the Vienna Museum, also labelled "Mexico (*Bilimek*)," which closely resembles the other two which have been above referred to this species, but it has the horns a little longer and more porrect, and the forehead more concave; it appears to bear much the same relation to *C. concinna* that *C. cavicornis* bears to *C. testacea*, and may or may not be distinct.

10. **Ceresa puncticeps.**

Ceresa puncticeps, Stål, Stett. ent. Zeit. 1864, p. 70[1].

Hab. Mexico (*coll. Signoret*[1], *in Mus. Vind. Cæs.*).

It is impossible to identify this species, either from the description or from the single example on which it was described, which I have before me. The insect is very old and quite faded, and has both the horns broken, so that their original length cannot be ascertained. Stål himself compares it with *C.* (*Stictocephala*) *uniformis*, and, at first sight, with the horns broken, it superficially resembles specimens of that insect as they stand in collections; but on a closer examination the difference is obvious.

CENTROGONIA.

Centrogonia, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 24 (1869).

The members of this genus are very closely allied to *Ceresa*, from which they appear to be hardly distinct, although in general appearance they more closely resemble *Nassunia*; the genus was formed by Stål for the reception of *Ceresa ciliata*, Fairm., *C. nasuta*, Stål, and *C. unguicularis*. Stål, to the last of which the species below described appears to be closely related.

1. **Centrogonia elegans,** sp. n. (Tab. VII. figg. 16, 16 *a*.)

Angustior, capite magno, subquadrato, testaceo, rufo-brunneo variegato, rugoso, oculis prominentibus; pronoto antice obscure rufo-brunneo testaceo-irrorato, postice dilutiori, processu postico rufo-brunneo annulato; cornibus acutis, deflexis; metopidio convexo, pubescenti, fortiter punctato, longitudinaliter rugoso; dorso fere recto, leviter carinato, in processum posticum elongatum tenuem extenso, lateribus haud fortiter impressis; tegminibus hyalinis; pedibus dilute testaceis, tarsis apiceque tibiarum nigris.

Rather a narrow and slender species, of a rufous-brown colour, in front variegated and irrorated with testaceous, the hinder part of the pronotum lighter testaceous, with the base of the long and slender posterior

process furnished with a broad rufous-brown ring bordered in front with light testaceous; between this and the apex of the process, which is dark, there are two narrow rufous-brown bands; metopidium convex, with long scanty pubescence, strongly punctured, rugose; pronotum distinctly punctured throughout, but more remotely behind, impressed at the sides, with the humeral horns sharp (if viewed from the front almost straight, but if viewed from above plainly deflexed), their extreme tips dark; dorsum almost straight if viewed from the side, apical process slightly deflexed; tegmina hyaline, with the veins distinct, brown or pitchy testaceous; legs light testaceous, with the tarsi, the apex of the tibiæ, and a minute spot at the base of the latter, black.

Long. 7 millim.; lat. int. corn. 3 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

STICTOCEPHALA.

Stictocephala, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 24 (1869).

Stål separates this genus from *Ceresa* on the absence of the lateral horns of the pronotum, and the fact that the pronotum is convex and not keeled in front for a considerable portion of its length; as a matter of fact, however, neither of these characters is satisfactory, and the character on which the genus must be separated lies in the formation of the last abdominal segment of the male, which differs very much from that of *Ceresa*, the ædeagus being shorter and much widened at the apex, and the styles being much shorter.

In the present state of our knowledge it is almost hopeless to distinguish the members of the genus satisfactorily, for they appear to have been described in several instances from old and faded specimens, and when a long series is available for comparison it is evident that examples which evidently belong to the same species differ considerably in size and breadth &c. *Stictocephala* appears to be almost, if not entirely, confined to North and Central America.

1. Stictocephala femorata.

Ceresa femorata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 289[1].
Thelia tacta, Walk. List of Homopt. Ins. ii. p. 560[2].

Hab. Mexico[1 2], Chapultepec and Puebla (*Bilimek, in Mus. Vind. Cæs.*), Guanajuato (*Mus. Roy. Belg.*), Mexico city (*H. H. Smith*).

This species is the *Thelia tacta* of Walker (according to his types, though not quite according to his description), and answers exactly to the description of *C. femorata* of Fairmaire. It may be known by its greenish colour (which, however, in many old specimens is entirely faded to a light testaceous), and especially by the colour of the underside, which is almost entirely black in the male, the ovipositor only being black in the female; in the male, moreover, the upper part of the base of the femora is black, in the female the legs are of a uniform testaceous or greenish-testaceous colour. One or two of the species that have been described without reference to sex ought very probably to be referred to this species.

2. **Stictocephala dubia,** sp. n.

Testacea vel virescenti-testacea, capite dilutiori; pronoto densius et distinctius punctato, humeris distincte prominulis, processu apicali, carinâ dorsali usque ad medium et carinis anticis lateralibus late rufis, punctis quibusdam albidis, colore nisi in recentibus exemplis multo dilutiori et decolorato, sæpe uniformi, testaceo; corpore subtus toto testaceo, abdominis disco raro infuscato; pedibus testaceis.

Of a testaceous or greenish-testaceous colour, with the head lighter and the pronotum broadly red along the dorsal and lateral keels, proceeding in front from the dorsal keel, the red and part of the testaceous colour in quite fresh specimens being sprinkled with minute whitish spots; the colour, however, is extremely variable, and the red seems very fugitive; the punctuation of the pronotum varies considerably, but is usually distinct, and is coarser at the sides; the underside is testaceous, the disc of the abdomen being rarely dark; legs testaceous.

Long. cum tegm. 6–6½ millim.; lat. int. hum. 2½–3 millim.

Hab. MEXICO, Chilpancingo in Guerrero, Cuernavaca in Morelos, Teapa in Tabasco (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*), Orizaba (*H. H. S. & F. D. G.*), Temax in North Yucatan (*Gaumer*); GUATEMALA, near the city (*Champion*).

This species is very variable in colour and in a certain degree in shape, and I have had to go to a great extent by the localities in keeping the specimens united. It is quite probable that *Ceresa chlorotica* and *C. uniformis*, Fairm., are forms of this species, but it is impossible to identify them from the descriptions, which are practically the same in both cases, or from the old uniformly testaceous and evidently faded examples which stand in the Belgian and Vienna Museum collections under these names. In the British Museum collection there is the single type of *Thelia rufivitta*, Walker (from Florida), which is a *Stictocephala* and comes very near the most brightly red-coloured examples of this species, and may perhaps belong to it; the formation, however, of the shoulders is different.

Var. **major.**

Virescens, major, distinctius fortiusque punctata.

Much larger than the type, of a greenish or greenish-testaceous colour, with the punctuation stronger.
Long. cum tegm. 8 millim.; lat. 4 millim.

Hab. MEXICO (*Sallé*), Ciudad in Durango 8100 feet (*Forrer*), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

This variety looks exceedingly different from the type-form of the species, but it is not distinct enough to be separated unless more examples can be discovered, as there is at least one typical and one or two intermediate forms from the same locality.

3. **Stictocephala fusca,** sp. n. (Tab. VII. figg. 17, 17 *a*.)

Fusco-brunnea, capite metopidioque supra caput flavo-testaceis; pronoto dense et distincte antice subrugosius punctato, humeris prominulis sed variantibus; abdomine testaceo; pedibus dilute testaceis.

Very like some of the forms of the preceding species, somewhat variable in shape, of a fuscous-brown colour, sometimes with very small lighter spots on the disc and at the sides of the pronotum, which are more strongly punctured than the front part, where the punctuation is thick and finer and slightly subrugose;

the shoulders are slightly prominent, but more so in some specimens than in others; the head and front part of the metopidium are yellow-testaceous, and occasionally the hinder part of the pronotum is reddish; the abdomen is testaceous, and the legs clear testaceous, the colour in some specimens being very light.

Long. cum tegm. 6 millim.; lat. int. hum. 3 millim.

Hab. MEXICO, Presidio de Mazatlan (*Forrer*).

Several specimens. It is quite possible that this may be only a variety of the preceding species, but the examples are quite fresh and differ considerably in colour and general appearance from the type specimens of *S. dubia*.

4. **Stictocephala elongata,** sp. n. (Tab. VII. figg. 18, 18 *a*.)

Elongata, angusta, viridescens; pronoto a latere viso minus elevato, supra viso depresso, antice subtilius ad latera parcius fortiusque punctato, carinâ dorsali latâ obtusâ utrinque apicem versus compresso-sulcatâ, humeris rotundatis, haud prominulis; abdomine pedibusque totis testaceis.

Narrow and elongate, with the pronotum greenish, the head and front part of the metopidium being testaceous; pronotum very narrow between the shoulders, which are rounded and not prominent, finely punctured in front, coarsely at the sides, with the flattened front part before the dorsal carina very long, the dorsal carina being obtuse and broad and compressed and indistinctly sulcate on each side of the apical process; the abdomen and legs are entirely testaceous.

Long. cum tegm. 7 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

One female specimen. This is one of the most distinct of all the representatives of this genus in our collection.

5. **Stictocephala cornuta,** sp. n.

Testacea, nitida, capite metopidioque supra caput flavis; pronoto dense fortiusque, ad latera parcius, punctato, humeris in cornua modica sat acuta vix reflexa productis, carinâ dorsali et carinis lateralibus ex hac procedentibus cum cornibus læte rufis, his ad extremum apicem nigris, impressione laterali semicirculari conspicuâ, processu apicali acuto toto rufo; corpore subtus pedibusque flavo-testaceis.

Of a testaceous colour, with the head and front of the metopidium lighter, and with the dorsal keel and keels proceeding from this broadly and brightly red, the surface being often flecked with small light spots and in front with greenish spots or patches; the pronotum is distinctly punctured, more coarsely at the sides, where the lateral semicircular impression is very distinct, and is produced in front into two moderate horns, which are stout and very slightly reflexed, and are red, with the extreme tips black; the apical process is long and acute, red; the underside and legs are entirely of a light testaceous colour.

Long. cum tegm. 7 millim.; lat. int. hum. $4\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

Two males and one female. This species is like a *Ceresa* in general appearance, but the formation of the apical appendages of the male (which are exposed and visible in the type specimen) shows clearly that it must be referred to *Stictocephala*.

There are three rather coarsely punctured specimens of a *Stictocephala* in our collection (one male and two females), labelled "Quezaltenango, Guatemala, 7800 feet (*Champion*)," which have the underside infuscate in both male and female, and may perhaps belong to another species, but they are too much faded and discoloured to identify or describe.

PHACUSA.

Phacusa, Stål, Stett. ent. Zeit. 1864, p. 72; Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 247 (1869).

This genus was formed by Stål to include one or two species closely allied to *Acutalis*, but larger and more elongate than the average representatives of the latter genus, and chiefly distinguished by the fact that the tegmina have one discoidal area; as in *Acutalis*, the tegmina and the wings have five and four apical areas respectively. Stål has described two species, and three more are here added, all being from Central America.

1. **Phacusa flavo-marginata.** (Tab. VII. figg. 19, 19 *a*.)

Phacusa flavo-marginata, Stål, Stett. ent. Zeit. 1864, p. 72[1].

Hab. Mexico (*coll. Signoret*[1], *in Mus. Vind. Cæs.*).

One very imperfect example. This species appears to be a well-marked and distinct one, and may be easily known by the colour of the pronotum and the black base of the tegmina.

2. **Phacusa pallescens.**

Phacusa pallescens, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 247[1].

Hab. Mexico (*coll. Signoret*[1], *in Mus. Vind. Cæs.*).

This is a small pale testaceous species, of about the same size and appearance as a pale specimen of *Acutalis fusco-nervosa*, from which it may at once be distinguished by the neuration of the tegmina.

3. **Phacusa major,** sp. n. (Tab. VII. figg. 20, 20 *a*.)

Elongata, nitida, unicolor, olivacea vel testacea: *P. pallescenti* maxime affinis, sed multo major, antice latior, humerisque magis prominulis.

Much larger and broader than *P. pallescens*, to which it is closely allied, and with the shoulders more prominent; the tegmina are entirely hyaline or slightly infuscate towards the apex.

Long. 9 millim.; lat. int. hum. 4 millim.

Hab. Guatemala, Volcan de Agua 8500 to 10,500 feet, San Gerónimo 3000 feet (*Champion*).

The two specimens from San Gerónimo are more distinctly punctured and have the tegmina slightly infuscate towards the apex; they can hardly, however, be regarded as distinct, and may perhaps be a connecting-link between *P. major* and *P. pallescens*. We figure a specimen from the Volcan de Agua.

4. **Phacusa variata,** sp. n.

Præcedenti affinis, sed minor, dilute testacea, capite pallido notis quibusdam obscurioribus nonnunquam ornato, pronoto antice et apice ejusdem vel spatio ante apicem late castaneo; pedibus rufo-testaceis; tegminibus hyalinis, vittâ ante apicem plus minusve distinctâ, interdum fere deficiente, notatis.

Allied to the preceding, but of a pale testaceous colour, with the head pale, sometimes with darker markings, and with the pronotum broadly castaneous in front as well as at the apex; sometimes the apex is pale and there is a dark patch before it; the tegmina are hyaline, with a broad oblique patch at the apex, which is sometimes very distinct and sometimes only just indicated; legs rufo-testaceous.

Long. $6\frac{1}{2}$ millim.; lat. int. hum. 3 millim.

Hab. MEXICO, Xucumanatlan and Omilteme in Guerrero 7000 to 8000 feet (*H. H. Smith*); GUATEMALA, Quiche Mountains 7000 to 9000 feet, Totonicapam 8500 to 10,000 feet, San Gerónimo 3000 feet (*Champion*).

5. **Phacusa dubia,** sp. n.

Brevior, pronoto testaceo, unicolori, vel antice nigro notato, tegminibus ad marginem fuscatis, venis plerumque nigris, crassioribus, areâque discoidali minimâ; corpore subtus obscuriori; pedibus rufo-testaceis vel fusco-testaceis.

Rather shorter than the preceding species, with the pronotum unicolorous or marked with a large black spot in front; the tegmina are infuscate towards the margin, with the veins for the most part thick and black and with the discoidal area very small; the legs and underside vary somewhat in colour.

Long. 6 millim.; lat. int. hum. 3 millim.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*); PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

I feel very doubtful with regard to one or two of these species, but with the present amount of material available it is hard to arrange them differently. Stål appears to have described *P. pallescens* and *P. flavo-marginata* on single specimens, and it is quite possible that when a large series is examined two or three of the species may be found to be not really distinct, as the differences appear to a certain degree to resemble those found in a large series of *Acutalis fusconervosa*, pale specimens of the latter species closely resembling *P. pallescens*, while some of the coloured specimens are very like *P. variata*, except that they are smaller. As a rule, the formation of the single discoidal area of the tegmina is very distinct, but occasionally it is separated by an abnormal vein, so that the specimens in which this occurs might almost be referred to *Euritea*.

6. **Phacusa lineola.** (Tab. VII. figg. 21, 21 *a*.)

Darnis lineola, Walk. List of Homopt. Ins., Suppl. p. 146 [1].

Hab. MEXICO (*Glennie* [1]; *Bilimek, in Mus. Vind. Cæs.*), Atoyac in Vera Cruz (*Schumann*).

This species is narrower and more elongate than any of the preceding, and has the lines on the sides of the pronotum much more strongly impressed; it is, moreover, more closely and distinctly punctured, and therefore duller. The tegmina are almost entirely uncovered and are altogether hyaline, except for a distinct oblique dark band at the apex; the apical petiolate cell of the tegmina is very small; the colour appears to be green in life, but fades to testaceous in dry specimens. I have not much doubt in referring the species to *Phacusa*, although it might perhaps be made the type of a new genus. A specimen from Atoyac is figured.

EURITEA.

Euritea, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 552 (1867).

This genus closely resembles *Phacusa*, of which it is regarded by Stål as a subgenus; it is distinguished by the fact that the tegmina have two discoidal areas.

1. **Euritea personata.** (Tab. VII. figg. 22, 22 *a*.)

Phacusa (*Euritea*) *personata,* Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 247 [1].

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).—Colombia, Bogota [1].

In general appearance this species much resembles *Phacusa dubia*, but is easily distinguished by the venation and colour of the tegmina.

2. **Euritea munda.** (Tab. VII. figg. 23, 23 *a*.)

Parmula munda, Walk. List of Homopt. Ins., Suppl. p. 152 [1].
Phacusa (*Euritea*) *nigripes,* Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 248 [2].

Hab. Mexico (*Sallé* [1]; *coll. Signoret* [2]); Guatemala (*Deby* [1]), Cubilguitz in Vera Paz, Volcan de Atitlan (*Champion*).

A very distinct species, of which we figure a specimen from the Volcan de Atitlan.

ACUTALIS.

Acutalis, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 496 (1846) (part.).

As here limited, this genus contains those species which have five apical areas to the tegmina and no discoidal area; occasionally one of the small areas at the apex of the internal or external margins is wanting or has the vein ill-defined, but this is very seldom the case, and the species cannot be confounded with *Micrutalis*, in which the veins are less marked, and in the great majority of species very inconspicuous. Fairmaire mentions *Acutalis* as having five apical areas, but says that one is often "atrophied," and he gives two figures (*op. cit.* t. 7. figg. 18 & 20; not 19, as he states in error on p. 496) which well represent the difference between *Acutalis* and *Micrutalis*, but refers both to *Acutalis*: throughout the Homoptera certain veins are often wanting in some examples of one species; but if the difference is constant throughout a whole species or group of species, those veins can hardly be spoken of as "atrophied." *Micrutalis balteata* forms a connecting-link between the two genera; but if its tegmina be examined, the differences will be at once apparent, and, with the exception of this and one or two allied species, the members of the last-named genus are very small and inconspicuous.

1. **Acutalis fusconervosa.**

Acutalis fusconervosa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 491[1].

Hab. Mexico (*Sallé*), Atoyac in Vera Cruz (*Schumann*), Orizaba (*Sallé & H. H. Smith*), Chilpancingo in Guerrero, Teapa in Tabasco (*H. H. Smith*); Guatemala, San Juan and Senahu in Vera Paz, Las Mercedes, Panajachel (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).—Colombia[1].

This is an extremely variable species as regards colour; the pronotum is either of a light unicolorous testaceous, in which case the insect superficially bears an exceedingly close resemblance to *Phacusa pallescens*, or has a darker patch in front, which varies from light castaneous to almost black, and is often broken by lighter patches; occasionally the pronotum is greenish, with a testaceous patch in front; the veins of the tegmina also vary in depth of colour. The darkest specimens are very near *A. nigrinervis*, but even in extreme examples they may be known by the fact that the dark colour is always more or less broken or suffused before the apical process, and that the veins of the tegmina are less marked; at the same time it is possible that *A. nigrinervis* may be merely an extreme local variety of this species.

Its variability naturally creates a doubt with regard to species in allied genera, of which, as yet, only small series are known; probably, as time elapses, several of them will be classed together, when connecting-links are discovered between them.

2. **Acutalis nigrinervis,** sp. n. (Tab. VII. figg. 24, 24 *a*.)

Acutalis nigrinervis, Stål, in litt.

Præcedenti affinis, nitida, capite nigro, margine anteriori late flavo-testaceo; pronoto nigro, vittâ supra frontem, aliâque utrinque laterali antice ante oculos marginem attingenti, postice ad processum apicalem extensâ, apice ipso toto nigro; tegminibus hyalinis, venis crassis, nigris; abdomine pedibusque testaceis, interdum ad partem leviter infuscatis.

Black, shining, with the front part of the head, a band above the forehead, and a band at each side of the pronotum light yellowish-testaceous, sometimes with a greenish tinge; the two lateral bands touch the margin in front, and behind merge in the dark colour of the apical process; upper surface thickly and rather distinctly punctured; tegmina hyaline, with large thick dark veins; abdomen testaceous; underside of front parts mostly dark; legs testaceous, with the tarsi and sometimes the upper part of the tibiæ and femora more or less infuscate.

Long. 5 millim.; lat. int. hum. 2 millim.

Hab. Mexico (*Mus. Vind. Cæs.*), Orizaba (*F. D. G. & H. H. S.; Bilimek, in Mus. Vind. Cæs.*), Vera Cruz, Fortin[1] (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*).

The differences between this insect and the preceding have been pointed out above. The name *A. nigrinervis* is attached to the insect in the Vienna Museum collection, and is apparently a manuscript name of Stål's; he does not, however, appear to have ever published a description, and this is the case with several other species, and great confusion is caused thereby. An example from Orizaba is figured.

TRACHYTALIS, gen. nov.

Genus *Micrutali* affine, sed pronoto haudquaquam nitido, densius fortiusque punctato, lineâque centrali distinctâ instructo; processu postico multo magis elongato, curvato, dorso a latere viso plus minusve sinuato; tegminibus areis apicalibus quatuor, unâque magnâ centrali discoidali; alis areis apicalibus tribus.

Allied to *Micrutalis*, from the greater number of species of which genus it may be at once known by the large central discoidal area of the tegmina, immediately behind which follows a distinct basal area; the chief distinguishing characters, however, are the long posterior process of the pronotum, which reaches as far, or nearly as far, as the apex of the tegmina, and the more or less distinct sinuation of the dorsum, if viewed laterally, as well as the dull fuscous colour, the raised central line of the pronotum, and the close and strong punctuation, which is also present on the external part, at all events, of the strongly veined tegmina.

1. **Trachytalis isabellina,** sp. n. (Tab. VII. figg. 25, 25 *a*.)

Isabellina, fusco-grisea vel fusco-brunnea, obscure griseo-variegata, capite nigro; pronoto dense et distincte punctato, dorso a latere viso levissime sinuato; corpore subtus flavescenti; tegminibus hyalinis, marginibus ad basin maculâque ad medium fuscis; pedibus fuscis vel fusco-testaceis.

Of a dark dun colour, greyish or brownish, with more or less obscure specks of greyish variegation; head black; pronotum thickly and distinctly punctured, very slightly, but distinctly, sinuate, if viewed from the side; the body is yellowish underneath; the tegmina are hyaline, with the margin towards the base punctured and more or less infuscate, and usually with a distinct elongate fuscous patch at the edge of the large discoidal area; legs fuscous or fusco-testaceous.

Long. 5 millim.; lat. int. hum. 2 millim.

Hab. Mexico (*coll. Signoret*), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

A considerable series has been received from Chilpancingo. The two specimens in Signoret's collection are rather larger, and have the fuscous patch on the tegmina more marked, but they can hardly be regarded as distinct. We figure an example from Chilpancingo.

2. **Trachytalis distinguenda,** sp. n.

Præcedenti simillima, sed dorso a latere viso ad medium sat profunde sinuato, vittâque ad basin processus pronoti, apiceque ejusdem extremo excepto, testaceis, facillime distinguendus.

This species may very easily be distinguished from the preceding by its outline, if viewed from the side, there being a deep sinuation in the middle, which causes the front and hinder part to be raised and rounded; the process of the pronotum is also shorter; the general colour is darker, and there is a whitish-testaceous ring at the base of the pronotal process, the apex of the latter being broadly whitish-testaceous, except at its extreme tip; the tegmina are more distinctly and irregularly infuscate.

Long. 4 millim.; lat. int. hum. 2 millim.

Hab. Mexico, Cuernavaca in Morelos (*H. H. Smith*).

Two examples. In one or two specimens belonging to the preceding species there is a tendency to a lighter patch before the apex, but the outline of the dorsum of *T. distinguenda* will at once distinguish it.

MICRUTALIS, gen. nov.

Genus *Acutali* et *Trachytali* affine, sed ab illo tegminibus areis apicalibus quatuor, formâ breviori, et staturâ sæpissime minimâ, ab hoc, ut supra memoratum est, distinguendus.

Closely allied to *Acutalis*, with which it has usually been included, but distinguished by the fact that the tegmina have only four apical areas; as a rule there is no discoidal area, but occasionally the central basal area has a vein running across it a little before the base, thus forming two areas; the venation of the wings is variable, three or two apical areas being present, but no discoidal; the tegmina are either entirely hyaline, or to a greater or less extent coriaceous and opaque.

This genus presents great difficulties, and perhaps ought not to be separated from *Acutalis* in the present state of our knowledge, although I feel sure that eventually it will have to be even further subdivided. There are apparently two well-marked forms —one in which the tegmina are entirely hyaline, or with a small dark spot at the extreme base, and the other in which they are to a greater or less extent coriaceous and opaque; in the latter case it is hard to distinguish the veins, even when the tegmina are mounted in Canada balsam and examined under a compound microscope, as they are of almost the same consistency as the opaque portion through which they run. In one case (*M. binaria*) I have found this difference to be, in part at least, sexual, and it will probably be found to hold in other species also. In a considerable number of the species with hyaline elytra the veins are very fine and scarcely traceable, while in others they are thick and conspicuous and approach the venation of *Acutalis*. There are only four apical areas to the tegmina, and, as a rule, no discoidal; in some specimens, however, of these species with more stoutly veined tegmina, there is a small area cut off from the central basal area, as above stated, which makes the latter appear divided, with part forming a discoidal area; the venation, however, in these cases is very different from that of *Trachytalis*, which is abundantly distinct by other characters apart from venation.

The species are extremely variable in several cases, and it is impossible without the actual comparison of the type-specimens (which I have not been able to see in all cases) to tell what is the correct synonymy; some of them have been described under *Horiola*, to which they cannot belong, if the figures of the tegmina given by Fairmaire (Ann. Soc. Ent. Fr. sér. 2, iv. t. 7), even with Stål's alterations (Hem Fabr. p. 21, note), are right; the difficulty is increased by the presence of specimens under MS. names in Signoret's collection.

With the exception of *M. balteata*, the species are very small, and one or two are among the most minute of the Membracidæ.

1. **Micrutalis balteata.**

Acutalis balteata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 496 [1].

Hab. GUATEMALA, Cerro Zunil (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*). —COLOMBIA (*coll. Signoret* [1], *in Mus. Vind. Cæs.*).

The specimens in our collection do not quite agree with the ordinary form, being

rather smaller and somewhat differently coloured, but they can hardly be regarded as belonging to a distinct species; the colour of the typical form is variable.

2. **Micrutalis binaria.**

Acutalis binaria, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 497 [1].

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*), Orizaba (*Sallé*), Fortin in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); Nicaragua, Chontales (*Janson*).—Colombia [1].

The type form described by Fairmaire is very easy to distinguish, for it is, as he says, "partagée en deux parts," the front part including the basal portion of the tegmina being black, and the hinder part whitish. Among some specimens of this form, however, from Chontales, Nicaragua, there is one with the tegmina entirely hyaline, which proves to be a male, and, as far as I have been able to examine, the difference is certainly in part sexual: before finding this out I had come to the conclusion that the coriaceous basal portion of the elytra might form a good character for the subdivision of the genus, and certainly for dividing species; under the circumstances, however, I cannot find any real distinction for the following insects which come from much the same localities, and I therefore provisionally arrange them as a variety of *M. binaria.*

Var. **mutabilis.**

Differt a formâ typicâ tegminibus in utroque sexu totis hyalinis, et colore variabili.

Colour very variable, whitish, with a black patch on the front of the pronotum, or testaceous with darker markings, or with the pronotum dark with yellowish or whitish spots; the tegmina in both sexes are entirely hyaline, or at most are a little darker at their extreme base. The length, as in the type form, varies from $2\frac{1}{2}$–3 millim.

Hab. Mexico (*Sallé; Bilimek, in Mus. Vind. Cæs.; Mus. Holm.*), Omilteme and Chilpancingo in Guerrero, Teapa in Tabasco (*H. H. Smith*); Guatemala, near the city (*Champion*).

In the Belgian Museum collection there are several specimens of a *Micrutalis* from "Guanajuato," Mexico, labelled *Acutalis mœsta,* a species described by Stål from Rio Janeiro (Kongl. Sv. Vet.-Ak. Handl., Band. iii. Häft. 2, p. 33). They appear to be identical with the insects here described as *M. binaria,* var. *mutabilis,* and if correctly named the whole must be referred to *A. mœsta,* Stål, which must be regarded as a separate species, or sunk as a variety of *M. binaria,* probably the latter, because of intermediate forms; I have not, however, seen a type specimen of *A. mœsta.*

To judge from the description, *A. variabilis,* Berg (Hem. Arg. pp. 244, 302), may be a rather larger form of the same species.

It must be admitted that the extreme forms of *M. binaria* appear entirely different, but it seems impossible, with a long series before one, to divide it satisfactorily; it is probable that the two or three species next described or noticed may also be only extreme forms of *M. binaria.*

As I have already noted, *anteà,* p. 85, *M. binaria* is perhaps not distinct from *Tragopa ephippium,* Burm., which I suspect is a *Micrutalis.*

3. **Micrutalis discalis.**

Horiola discalis, Walk. List of Homopt. Ins., Suppl. p. 154[1].

Hab. Mexico, Vera Cruz (*Sallé*[1]).

This is a very pretty little species, yellowish in front, deep black abruptly behind, and white at the extreme tip. I have not seen another specimen like it, but I am of opinion that it will very probably prove to be a variety of *M. binaria*.

4. **Micrutalis pallens,** sp. n.

Tota pallide testacea, vel capite notis quibusdam fuscis, pectoreque ad partem infuscato, tegminibus totis hyalinis; pronoto dense subtiliterque punctato ad apicem interdum obscuriori, tegminibus multo breviori; pedibus testaceis, tarsis unicoloribus vel partem nigricantibus.

Entirely pale testaceous, or with the head, the chest, the extreme apex of the pronotum (or the sides of the apical portion), and the tarsi sometimes marked with darker colour; pronotum very thickly and finely punctured, but in this point somewhat variable; shoulders rather prominent, if viewed from above; tegmina and wings clear hyaline.

Long. 3 millim.; lat. $1\frac{3}{4}$–2 millim.

Hab. Mexico, Omilteme in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

This insect may at once be known by its uniform colour; as far as structure goes it closely resembles *M. binaria*, and may be only a variety of that species.

5. **Micrutalis malleifera,** sp. n. (Tab. VIII. figg. 1, 1 *a*.)

Nigra, capite antice albido, ad basin nigro; pronoto antice lato, humeris vix prominulis, dorso a latere viso fere recto, subtilissime punctato, subalutaceo, nigro, linea angusta supra caput, marginibus humerorum, maculâ minutâ supra hoc, maculâ utrinque latâ ad marginem pone medium, apiceque ipso, albidis; tegminibus totis hyalinis, venis indistinctis; abdomine testaceo-albido; pectore abrupte nigro; pedibus albidis, plus minusve infuscatis.

A moderate-sized species, with the head whitish in front and black at the base; the pronotum is very finely punctured and subalutaceous, with the dorsum almost straight, if viewed from the side, black, with the margins above the head and near the shoulders, and a minute spot near the shoulders, whitish; behind the middle there are two white patches at the margins, which constrict the black colour to a narrow band, and these, with the white apex, form a mallet-shaped large black marking covering nearly the whole pronotum; the tegmina are entirely hyaline, with indistinct veins; the abdomen is testaceous-white, the chest being abruptly black; legs whitish-testaceous, more or less infuscate.

Long. 4 millim.; lat. int. hum. 2 millim.

Hab. Mexico, Orizaba (*Bilimek, in Mus. Vind. Cæs.; H. H. Smith & F. D. Godman*).

The species appears to be very distinct in its extreme form, but there are some small specimens in the Vienna Museum collection which seem to approach certain varieties of *M. binaria*.

6. **Micrutalis viridicollis,** sp. n. (Tab. VIII. figg. 2, 2 *a*.)

Robusta, capite longo, nigro-brunneo, lineâ longitudinali testaceâ; oculis prominulis; pronoto antice lato, utrinque fortiter impresso, distincte fortius punctato, a latere viso rotundato-elevato, ante apicem brevem depresso, humeris prominulis, nigro, vittâ latâ virescenti semicirculari a medio extensâ, maculam magnam

obscuram in metopidio includente, apice extremo albido; tegminibus nitidis, parte tertiâ apicali exceptâ nigris, opacis, hâc hyalinâ, venis testaceis distinctis; corpore subtus (lateribus prosterni brunneis nitidis exceptis) pedibusque totis læte flavo-testaceis.

Rather a broad, stout species, with the head dark, with a light central line; pronotum strongly impressed at the sides, distinctly and not very closely punctured, with a blunt, short, depressed apex; the dorsum, if viewed from the side, is rather strongly rounded; the colour of the pronotum is black, with a large green semicircular band extending from the middle to the shoulders and along the sides of the metopidium, and enclosing on the latter a large dark patch which reaches the front margin, the extreme apex whitish; tegmina shining black for almost two-thirds of their length, then abruptly hyaline, the hyaline portion being furnished with distinct testaceous veins; underside and legs clear yellow-testaceous, the sides of the prosternum brown, very shining.

Long. 4 millim.; lat. int. hum. 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

One female specimen. This is a very distinct species, and differs considerably from any other which I have seen; the colour may prove to be variable, but the general shape and structure and veining of the tegmina will serve to distinguish it.

7. **Micrutalis notatipennis,** sp. n. (Tab. VIII. figg. 3, 3 *a*.)

Robusta, lata, capite pronotoque totis nigris, hoc distincte remotius, ad latera densius, punctato, dorso a latere viso leviter sinuato, ante apicem nonnihil sinuato, apice ipso brevi; tegminibus, apice hyalino excepto, coriaceis, opacis, maculâ ad marginem exteriorem, alterâque minori ad marginem exteriorem albidâ, notatis; corpore subtus pedibusque nigris, tibiarum apice testaceo.

A broad, stout, and rather large species, entirely black, except the apex of the tegmina and two spots on the exterior and interior margins, which are hyaline; the tibiæ also have a whitish ring at the apex; pronotum distinctly and rather remotely punctured, more distinctly and strongly at the sides, the sides not or scarcely impressed, the shoulders marked by a smooth, rather sharp, callosity, the apex short and blunt, just reaching to the end of the coriaceous portion of the tegmina; veins ceasing before the hyaline portion of the tegmina.

Long. 4 millim.; lat. int. hum. $2\frac{1}{4}$ millim.

Hab. MEXICO, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

One male specimen. At first sight this species looks more like a small *Horiola* or *Tragopa*; but it belongs to neither of these genera, and it appears best to place it under *Micrutalis*, at all events provisionally.

8. **Micrutalis dubia,** sp. n.

Sat robusta et lata, nigra, nitida, pronoto latera versus obscure flavo-notato, subtilissime punctato, apice ipso brevi, obtusissimo, albescenti; tegminibus, plus quam tertiâ parte apicali exceptâ, brunneo-variegatis, parte apicali hyalinâ, venis magnis brunneis, areâ apicali secundâ minimâ, brunneâ, vix conspicuâ; corpore subtus nigro; pedibus brunneis.

Rather broad and short, shining black, with very obscure yellow markings at the sides of the pronotum, and a very narrow brownish-white line at the margins of the shoulders; pronotum very finely punctured, the apex short and blunt, whitish; tegmina with rather more than their apical third hyaline, and the rest dark, somewhat variegated, the veins large, dark, conspicuous, the area at the extreme apex very minute and dark; underside black; legs ferruginous-brown.

Long. 3 millim.; lat. int. hum. 2 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).

A single female specimen. This species bears a considerable affinity to the preceding, from which, however, it is very distinct.

9. **Micrutalis lugubrina.**

Acutalis lugubrina, Stål, Kongl. Sv. Vet.-Ak. Handl., Band. iii. Häft. 2 (Bidr. till R. Jan. Hem.-Faun. ii.), p. 32 (1860)[1].

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—BRAZIL, Rio Janeiro [1].

This is a small species, rather larger than the type form of *M.* (*Acutalis*) *binaria*, of a deep shining black colour, except the apex of the tegmina and abdomen, which are hyaline; as in *M. binaria* the veins are continued further than the dark coriaceous part of the tegmina, and on this portion are inconspicuous. The specimens in our collection agree so closely with those from Rio Janeiro in the Belgian Museum (from which locality Stål described it) that I cannot separate them; there is a slight difference in punctuation, but this is a very variable character in many Homoptera. The species stands in the Vienna Museum collection under the name of "*bipartita*" (apparently a MS. name of Signoret).

Var. **parallela.**

Formâ typicali magis parallelâ, pronoto fortius punctato, humeris minus prominulis, ad medium distinctius impresso, et interdum maculâ flavâ vel albidâ pone medium instructo.

More parallel than the type form and more strongly punctured, with the shoulders evidently less prominent, and with a rather distinct impression in the middle of the pronotum, behind which there is sometimes present a yellowish spot.

Long. $3\frac{1}{2}$ millim.; lat. int. hum. $1\frac{1}{2}$ millim.

Hab. GUATEMALA, Quezaltenango 7800 feet (*Champion*).

Since writing the above, I have received a representative specimen of *M. lugubrina* from the Stockholm Museum from Dr. Aurivillius; it does not, however, answer to Stål's description, for it has the tegmina entirely hyaline with the veins vitreous, whereas Stål says of the species (*l. c.* p. 32) "tegminibus, parte apicali exceptâ, brunneis, fusco-venosis."

10. **Micrutalis nigrolineata.**

Acutalis nigrolineata, Stål, Stett. ent. Zeit. 1864, p. 72[1].

Hab. MEXICO (*Mus. Holm.*[1]; *Mus. Vind. Cæs.*).

This species is not represented in our collection; it is testaceous, with a dark central line running down the pronotum and an abbreviated dark line on each side of it; these lines, however, are variable, and there are two specimens from Bogota in the Vienna Museum, labelled respectively "*biguttata*" and "*litterata*" (apparently MS. names of Signoret), which evidently belong to the same species. Apart from the colour, the

insect may be known by the entirely hyaline tegmina and distinct dark veins; the central basal area is so strongly petiolate that it appears almost as a discoidal area.

11. **Micrutalis albivitta,** sp. n.

M. lugubrinæ, var. *parallelæ*, maxime affinis, sed pronoto densius punctato et vittâ distinctâ albidâ mox ante apicem instructo, ceterâ nigro; tegminibus, apice excepto hyalino, nigris coriaceis, venis partem coriaceam haud superantibus; abdomine pedibusque nigris, his partim brunneis.

Very like *M. lugubrina*, var. *parallela*, but easily distinguished by the very distinct white band running across the pronotum just before the apex, which is the only marking on the upper surface, except a very small line at the margin near the shoulders (usually present in most of the species of the genus), and especially by the fact that the venation of the tegmina appears to be confined to the coriaceous portion.

Long. 4 millim.; lat. int. hum. 2 millim.

Hab. MEXICO, Cuernavaca (*Bilimek, in Mus. Vind. Cæs.*).

Apparently quite distinct from *M. lugubrina*.

Besides the species of *Micrutalis* above described or noticed, there is in the Vienna Museum an example from Mexico labelled "*flaviceps*, det. Stål" (apparently a MS. name), which appears to be a very small variety of *M. malleifera*, with the apical part of the pronotum darker. There is also among the undetermined insects in the Stockholm Museum a *Micrutalis* which, at first sight, superficially resembles *M. albivitta*, but is differently shaped and sculptured, and very distinct by reason of the hyaline tegmina and dark veins, and the presence of a small area behind what usually constitutes the central petiolate basal area, which latter, therefore, in this case becomes properly discoidal; the insect, however, is imperfect, and I have therefore not described it.

In the 'Bidrag till Rio Janeiro-Traktens Hemipter-Fauna' (pp. 32, 33) Stål describes seven species of the genus *Acutalis* (*A. plagiata*, *geniculata*, *semipallida*, *semialba*, *modesta*, *lugubrina*, and *mœsta*), apparently from single insects or very small series, for he mentions the female only of six, and the male only of one, and he adds the note, "Non nisi coloribus inter se differunt fere omnes species hic descriptæ; forte tantum varietates, quod melius docebit experientia." The series in our collection helps to clear up certain points, but very probably when a still larger amount of material has been obtained some of the species above described may have to be united together.

POLYGLYPTA.

Polyglypta, Burmeister, Handb. Ent. ii. 1, p. 142 (1835); Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 296; Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 240.

Numerous species have been described as belonging to this genus, which appears to be confined to Central America and the north-western portions of South America. They are elongate insects, of a black, brownish, or straw-colour, with the pronotum produced into a point before and behind, and they closely resemble the long grains of certain cereal plants, their likeness to which appears to be protective. A considerable

number of the so-called species have already been sunk by Stål and Butler as synonyms, and I have gone further than Stål has in one or two cases. No such series of the genus as that in our collection (numbering more than two hundred examples) has ever before been brought together, and it is evident from an examination of these that in many respects they are extremely variable insects, and that certain species which have been described on single or at most on two or three specimens will not stand. One of the chief characters that authors have made use of is derived from the number of costæ or raised ribs on each side of the pronotum; I find, however, that though it certainly is a help in some cases, yet, as a rule, it is most misleading, for the third costa from the dorsal costa (counting the dorsal costa as the first) is certainly variable in form among specimens belonging to what is undoubtedly the same species, being sometimes almost entire, sometimes half-defined, and sometimes rudimentary; the costal margin of the tegmina, moreover, is coloured like the pronotum and furnished with two or three costæ, which project beyond the sides of the pronotum and lie close against it when the insect is at rest, and appear at first sight as if they belonged to it, and these have been counted in by certain writers in their descriptions. Species have also been formed on the deflexion or reflexion of the anterior or posterior extremities, which is a very misleading character.

After a very careful examination of the series before me I feel that, with the exception of a comparatively small percentage, they might all be arranged as forms of one species, although those at the opposite poles would appear entirely different, and a considerable amount of further material and study will be necessary before the synonymy of the species can be regarded as in any way settled.

The larva of *P. costata*, of which there is a single specimen in our collection, from Atoyac in Vera Cruz, is almost 20 millim. long, pisciform, narrow, and elongate, of a greyish-testaceous colour, probably greenish in life, with the last segment of the abdomen very long (about 5 millim.), slender, and pointed, and with the process in front of the eyes (which are large) about 6 millim. in length, constricted at about 2 millim. from the eyes, and from thence widened and flattened and subcuneiform at the apex; the legs are long and slender.

1. Polyglypta costata.

♀. *Polyglypta costata*, Burm. Handb. Ent. ii. 1, p. 142[1].
♀. *Polyglypta bogotensis*, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 297[2].
♀. *Polyglypta nigriventris*, Fairm. loc. cit. p. 297[3].
♀. *Polyglypta straminea*, Walk. List of Homopt. Ins. ii. p. 544[4].
♂. *Polyglypta pilosa*, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 296[5].
♂. *Polyglypta viridimaculata*, Fairm. loc. cit. p. 298[6].
♂. *Polyglypta interrupta*, Walk. List of Homopt. Ins. ii. p. 545[7].
♂. *Polyglypta strigata*, Walk. List of Homopt. Ins., Suppl. p. 136[8].
♂. *Polyglypta reflexa*, Butl. Cist. Ent. ii. p. 207, t. 3. fig. 2[9].
♂. *Polyglypta godmani*, Dist. Ent. Monthly Mag. xvi. p. 11[10].

Hab. Mexico [1 5 8] (*Sallé*), Jalisco, Atoyac in Vera Cruz (*Schumann*); Guatemala [9] (*Sallé*), San Gerónimo and El Jicaro in Vera Paz, El Reposo, Las Mercedes, Cerro Zunil, Capetillo (*Champion*); Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers* [10]); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia [2 3 4 6 7].

I believe that the synonymy above given is correct, but exception may be taken to the inclusion of *P. bogotensis* under *P. costata*: Stål separates the two insects on the formation of the head and forehead and the number of the costæ; but the latter character is certainly misleading, and with regard to the former, though the head appears to be slightly variable in shape, yet it is not sufficiently so to found a species upon, and the difference of colour which often appears to occur in some specimens makes it seem rather longer or shorter, although, in fact, the difference is only apparent. Moreover, in the case of the specimens of *P. bogotensis* in Signoret's collection (referred to as typical specimens by Fairmaire) the head appears shorter and less angled than in those labelled *P. costata* and *P. nigriventris*, whereas, according to Stål, the reverse ought to be the case: if there were any males of *P. bogotensis* extant differing from the males of *P. costata*, the case might be altered, but I have never seen any male of that insect. Mr. Butler, indeed (*l. c.* p. 210), quotes both male and female as being in the British Museum; but the four specimens at present placed under the species in the collection are all undoubtedly females, and I think are certainly *P. costata*.

With regard to *P. reflexa* it was described by Mr. Butler on a single specimen; in our series there are several examples among the males of *P. costata* that resemble it in the reflexion of the horn, and in one or two specimens there is quite as marked a deflexion. Mr. Distant has kindly lent me the type of *P. godmani*, and it is evident that he has inadvertently counted in the external costæ of the tegmina, for there are only seven costæ proper on the pronotum (one dorsal and three on each side), whereas he mentions it as having thirteen, and in other respects it agrees with *P. pilosa*, which is now universally considered to be the male of *P. costata*.

Var. **nigridorsis.** (Tab. VIII. figg. 4, 4 *a*.)

♀. Elongata, testacea, dorso pronoti late nigro, vittis utrinque præcipue ad apicem a vitta dorsali usque ad marginem extensis, costis pronoti variantibus.

Elongate, testaceous, with the barb of the pronotum broadly black, and with more or less distinct bands or markings proceeding from the central band on each side; dorsal horn slightly but plainly reflexed.

Long. 13–15 millim.

Hab. Mexico, Orizaba (*Bilimek, in Mus. Vind. Cæs.*); Guatemala (*Mus. Roy. Belg.*), San Juan and San Gerónimo in Vera Paz (*Champion*).

This is an insect of about the same size as the ordinary run of *P. costata*, which stands in the British Museum collection under *P. dorsalis*, and in the Belgian Museum collection as *P. maculata*?; and in Signoret's collection there is a specimen placed apart and labelled "*P. costata*, det. Signoret." I am inclined to think that the

example in Signoret's collection is rightly determined, although some of the specimens certainly appear to run into extreme forms of *P. dorsalis*. The costæ on the pronotum are very variable, some specimens having four on each side besides the dorsal costa, others three and an abbreviated one, while one (which, perhaps, belongs to a different species) has three only, and another has three and an attenuated one on each side and three and two abbreviated costæ on the other.

All the specimens examined are females. One from San Juan is figured.

2. **Polyglypta dorsalis.** (Tab. VIII. figg. 5, 5 *a*, *b*, var.)

Polyglypta dorsalis, Burm. Rev. Ent. Silb. iv. p. 178 [1].
Polyglypta sicula, Am. et Serv. Hist. Nat. des Ins., Hém. p. 541 [2].
♂. *Polyglypta pallipes*, Burm. Rev. Ent. Silb. iv. p. 179 [3].
♂. *Polyglypta nigella*, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 298 [4].
Polyglypta fusca, Butl. Cist. Ent. ii. p. 208, t. 3. fig. 3 [5].
Polyglypta hordeacea, Butl. loc. cit. p. 209, t. 3. fig. 4 [6].

Hab. Mexico [1 2 3 4 5] (*Sallé*), Amula, Chilpancingo, and Tepetlapa in Guerrero, Cuernavaca in Morelos, Fortin in Vera Cruz (*H. H. Smith*), Orizaba (*F. D. G. & H. H. S.*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Chiacam, Sabo, San Joaquin and San Gerónimo in Vera Paz, Mirandilla, Capetillo (*Champion*); Costa Rica (*Van Patten*).—Amazons, Pará [6].

This is an extremely variable species, both in size and colour. The ordinary form is testaceous, with the back broadly dark, sometimes almost black, sometimes reddish; in a few specimens the ground-colour is greenish. The dark colour has a tendency to spread, and some specimens are almost entirely of a reddish-fulvous colour (*P. fusca*, Butl., is apparently one of these), while the variety of the male usually known as *P. pallipes* is almost entirely of a deep black colour.

I have excluded the larger forms which are by some authors referred to this species, and the difference of size is by this reduced, so that the specimens range from 9 millim. to 12 millim., and are narrower or broader in proportion. I am by no means sure, however, whether *P. maculata*, Fairm., and *P. tricolor*, Butl., ought not to be referred to this species. The males of the species described below as *P. dispar* are also intermediate forms, but the females appear to be quite distinct. Apart from the other differences of the specimens *inter se* the punctuation is also variable; there are, for instance, two typical specimens of *P. dorsalis* in our collection from the same locality and mounted on the same card, and both females, of which one is comparatively finely and the other coarsely punctured.

A specimen of a variety from Chilpancingo is figured.

3. **Polyglypta maculata.**

Polyglypta maculata, Burm. Rev. Ent. Silb. iv. p. 178 [1].
Polyglypta maculata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 297 [2].
Polyglypta flavo-maculata, Am. et Serv. Hist. Nat. des Ins. Hém. p. 541, t. 9. fig. 9 [3].
Polyglypta dorsalis, var., Stål, Öfv. Vet.-Ak. Förh. 1869, p. 240 [4].

Hab. Mexico (*Sallé* [1 2]), Omilteme and Xucumanatlan in Guerrero 7000 to 8000 feet (*H. H. Smith*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Oaxaca (*Mus. Roy. Belg.*). —Colombia, Bogota [2].

This species may be known by its dark brown colour and the yellow markings at the sides, which are fairly constant, and consist of three spots on each side, of which the two front ones are sometimes confluent. The pronotal horn is short and blunt. The male and female appear closely to resemble each other. The descriptions of Burmeister and Amyot and Serville clearly apply to this insect, which appears to be very distinct. Burmeister assigns eleven costæ to the pronotum, whereas Amyot and Serville mention nine only; but this probably arises from the confusion caused by variation in different specimens.

Amyot and Serville [3] give "Savana" as the locality for their *P. flavomaculata*; but whether Savannah in Georgia, the West Indies, or S. America is meant is uncertain.

4. **Polyglypta tricolor.**

Polyglypta tricolor, Butl. Cist. Ent. ii. p. 209, t. 3. fig. 5 [1].

Hab. Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Amula in Guerrero (*H. H. Smith*), Oaxaca (*Mus. Brit.* [1]).—Peru [1].

This species is allied to *P. maculata*, but is narrower and more elongate, with the pronotal horn longer and sharper. The male and female closely resemble each other. *P. brevivitta*, Walk., appears to be allied to this species, but is smaller and differs in other particulars.

5. **Polyglypta lineata.**

Polyglypta lineata, Burm. Rev. Ent. Silb. iv. p. 179 [1].
Polyglypta tredecim-costata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 299 [2].

Hab. Mexico [1 2], Cuernavaca in Morelos (*H. H. Smith; Bilimek, in Mus. Vind. Cæs.*), Amula and Xautipa in Guerrero (*H. H. Smith*), Orizaba (*F. D. G. & H. H. S.; Bilimek, in Mus. Vind. Cæs.*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), San Joaquin in Vera Paz (*Champion*).

There are five specimens among the undetermined material in the Vienna Museum labelled "Bilimek, Mexico," which appear to be the true *P. lineata* of Burmeister, answering to his description in size and structure of pronotal horn. Most of the examples I have seen are considerably larger, with the horn more produced and in

some cases reflexed. The costæ appear to be very variable in number. Of two specimens before me taken by Bilimek in Mexico, which agree in size and shape, and appear to have been taken at the same time, one has nine costæ and the other thirteen (one or two being abbreviated), and Signoret's specimen of *P. tredecim-costata* has only eleven costæ counting a rudimentary one. It is quite possible that *P. lineata* as here defined may be hereafter split up into several distinct species; but it might perhaps be of advantage to define the following variety:—

Var. **major.**

Major, cornu longiori, interdum reflexo, costis pronoti variantibus.
Long. 11–14 millim.

Hab. Mexico (*Bilimek*).

This variety might be described as a separate species were it not for intermediate forms.

6. **Polyglypta dispar,** sp. n. (Tab. VIII. figg. 6, 6 *a*, ♂; 7, 7 *a*, ♀.)

Nigra, nitida, pronoto sat fortiter punctato, novem-costato, apice acuto; pedibus rufis vel rufo-testaceis.

♀. Latior, cornu pronoti plerumque rectiori, et costis plerumque totis testaceis, interdum, præcipue ad medium, plus minusve nigris.

♂. Angustior, cornu pronoti plerumque leviter recurvato, et costis plerumque totis nigris, ad latera partim testaceis.

Female. Rather broad at the shoulders, with the pronotum produced into a moderately long and almost straight, sometimes slightly recurved, horn in front, with nine costæ, which are either entirely of a light testaceous colour (so that the insect appears to be marked with fine, regular, light and dark lines) or are partially dark (so that the dorsal portion appears more or less clouded with black).

Male. Smaller and narrower than female, with the pronotal horn, as a rule, slightly recurved, and with the black colour of the pronotum prevailing, but with the lateral costæ partly testaceous.

In both sexes the underside of the horn and the head are more or less testaceous, the markings being similarly coloured.

♀. Long. 11 millim.; lat. max. $2\frac{1}{2}$ millim.

♂. Long. 10 millim.; lat. max. 2 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

The female of this species is very distinct, but the male superficially resembles varieties of allied species; it has, however, a facies of its own, and I feel almost certain that the insects are the male and female of one species, although it is quite possible that future workers may come to a different conclusion.

7. **Polyglypta aguæ,** sp. n. (Tab. VIII. figg. 8, 8 *a*.)

Elongata, sat robusta, brunnea, unicolor, linea dorsali maculisque quibusdam dilutioribus, vel testaceo-adspersa; pronoto antice in cornu brevissimum obtusum producto, ad humeris lato, inde ad apicem modice acutum regulariter angustato, novem-costato; tegminibus hyalinis, margine costali brunneo, venis interioribus nigro-fuscis; pedibus sat longis, totis testaceis, vel femoribus plus minusve nigricantibus.

A rather stout species, which may be distinguished by its exceedingly short blunt horn and broad shoulders; the colour is variable, apparently, lighter or darker brown with lighter markings; the pronotum is deeply but comparatively finely punctured, with four costæ on each side, and is gradually narrowed from the shoulders

to a moderately acute point, which is, however, rounded at the extreme apex; the punctuation is rather stronger in front of the shoulders; tegmina hyaline, with the veins brown exteriorly, but fuscous or black on the disc.

Long. 9 millim. (sine cornu 8 millim.); lat. int. hum. $2\frac{1}{2}$ millim.

Hab. GUATEMALA, Volcan de Agua 8500 to 10,500 feet (*Champion*).

Two male specimens. At first sight, this insect almost appears as if it might form the type of a new genus; but the tegmina appear to be of the ordinary *Polyglypta* type, and there are no other differences sufficient to distinguish it from that genus.

There are specimens from Mexico in the Vienna and Stockholm Museums which are very closely allied to this species, except that they are slightly smaller and rather differently sculptured: I at first described them under a separate name, but, on further examination, I have come to the conclusion that they can scarcely be regarded as distinct; in certain points, however, they seem to lead on to extreme forms of the very variable *P. dorsalis*.

BILIMEKIA, gen. nov.

Corpus elongatum, parallelum; pronoto ab humeris in cornu longum et obtusum producto, fortiter pone oculos ad latera emarginato; dorso ab apice cornus usque ad apicem pronoti recto, hoc lato, truncato; humeris haud prominentibus; metopidii margine supra clypeum fere recto, clypeo lato, late et minus alte emarginato; pronoto leviter costato; tegminibus areis apicalibus tribus, areâ discoidali unâ subtriangulari; tibiis anticis et intermediis latis, subfoliaceis.

Body long and parallel, with the posterior extremity of the pronotum truncate, and the front portion produced into a long blunt horn, the upperside of which is straight and level with the back of the pronotum, the underside being slightly curved. The tegmina are almost entirely hidden by the pronotum, only the extreme edges being visible, and have only three apical areas, instead of five as in *Polyglypta*, and one subtriangular discoidal area. The wings appear to be veined much as in the last-named genus, with three apical areas. The anterior and intermediate tibiæ are broad and subfoliaceous. The general shape is exactly that of a steel-pen nib.

The characters above mentioned abundantly distinguish this genus, which in several important points differs from *Polyglypta*, although in others it is evidently allied to it.

I have named the genus after Herr Bilimek, "a friend and companion of the Emperor Maximilian in Mexico, and a very eager collector," as Herr Handlirsch informs me; all the specimens I have seen were obtained by him, and a very large proportion of the specimens from Central America in the Vienna Museum have his name attached to them.

1. **Bilimekia styliformis**, sp. n. (Tab. VIII. figg. 9, 9 *a*, *b*.)

Stramineo-testacea, unicolor, pronoto subtilius punctato, multicostato; cornu pronotis ad basin lato, apice obtuso, carinato; oculis sat magnis, testaceis; ocellis distinctis, ab oculis quam inter se minus remotis; tegminibus hyalinis, venis testaceis.

Of a unicolorous testaceous straw-colour, probably lighter in life, with the pronotum rather finely punctured

and furnished with from nine to a dozen fine costæ on each side; the pronotal horn is broad at the base and has five or six costæ on each side; tarsi occasionally somewhat darker than the rest of the legs.

Long. cum cornu 13 millim.; ab oculis ad apicem pronoti 8 millim.; lat. max. 2 millim. (♂ ♀.)

Hab. MEXICO (*Bilimek*).

2. **Bilimekia minor,** sp. n.

Duplo minor, cornu pronoti breviori, et lateribus utrinque sex- vel septem-costatis.

Very like the preceding but very much smaller, with the pronotum rather more finely punctured and with fewer costæ on each side, and the pronotal horn much shorter in proportion.

Long. cum cornu 7–8 millim.; ab oculis ad apicem pronoti $4\frac{1}{2}$–5 millim.; lat. max. $1\frac{1}{2}$ millim. (♂ ♀.)

Hab. MEXICO, Cuernavaca (*Bilimek*).

POLYGLYPTODES, gen. nov.

Polyglyptæ affinis, sed cornu pronoti a latere viso, ad basin latiori, et minus abrupte producto; capite sat magno, clypeo lato, modice semicirculariter exciso; tegminibus areis tantum tribus apicalibus, unâque discoidali, oblongâ, prope apicem sitâ instructis.

This genus is allied to *Polyglypta* and *Bilimekia*. From the former of these it may be distinguished by its finer sculpture and less abrupt horn (in which point, however, *Polyglypta aguæ* forms a transition between the two genera), and especially by the venation of the tegmina, which have only three apical areas, and the costal portion divided into three long basal areas instead of two as in *Polyglypta*. From *Bilimekia* it may at once be known by its shape and by the oblong discoidal cell of the tegmina, as well as by the fact that *Bilimekia* has only two long basal areas on its exterior portion, as in *Polyglypta*.

The three species here described differ more or less in shape and general appearance, but agree in the generic characters above given.

1. **Polyglyptodes cucullatus,** sp. n. (Tab. VIII. figg. 10, 10 *a*, *b*.)

Elongata, robustior, tota testacea (an viridi-testacea?), pronoto antice sinuatim in cornu breve, ad basin latum, ad apicem acutum, utrinque multicarinatum producto, dorso subrotundato, lateribus subparallelis in apicem obtusiusculum contracto, distincte et dense sed minus profunde punctato, undecim-costato; tegminibus hyalinis, venis pallidis; pedibus testaceis.

Elongate, but comparatively stout, of a unicolorous light testaceous colour, which is probably greenish in life; pronotum with the back slightly rounded, sinuate just above the shoulders, and produced into a short, porrect, moderately sharp horn, which is broad at the base and resembles a conical cap; at the sides of the horn there are several costæ; the sides of the pronotum are subparallel, very slightly rounded, and gradually contracted behind into a blunt apical process which reaches just as far as the apex of the tegmina; the punctuation of the pronotum is close and distinct, but not coarse, and on each side there are five or six fine but distinct costæ; the latter character, however, is variable, and one specimen before me has five on one side and six on the other; legs testaceous.

Long. 8 millim. (sine cornu 6 millim.); lat. max. 2 millim.

Hab. GUATEMALA, near the city (*Champion*).

Three specimens.

2. **Polyglyptodes affinis,** sp. n.

Præcedenti affinis, sed flavo-testacea, longior et angustior, cornu pronoti longiori et rectiori, carinis utrinque rarioribus et magis elevatis ; pronoto ad latera fortius punctato, dorso fere recto, haud sinuato, lateribus minus rotundatis.

Allied to the preceding, but of a more yellowish-testaceous colour (which may be different in life), and evidently longer, narrower, and less robust. The horn of the pronotum is considerably longer, more slender and straighter, and has fewer and stronger carinæ at the sides. The back is almost straight throughout, from the tip of the horn to the apex of the pronotum, which is more strongly punctured at the sides, and has the costæ, as a rule, more elevated, and the sides straighter, and is more gradually produced to a point both in front and behind, if viewed from above.

Long. 10–10½ millim. (sine cornu 8 millim.); lat. max. 1¾ millim.

Hab. MEXICO (*Bilimek, in Mus. Vind. Cæs.*).

Three female specimens.

3. **Polyglyptodes scaphiformis,** sp. n. (Tab. VIII. figg. 11, 11 *a*, *b*.)

Parva, elongata, angusta, fusca vel fusco-brunnea, capite metopidioque testaceis, pronoto in cornu breve, obtusum, utrinque carinatum, levissime deflexum producto, distincte minus fortiter punctato, plerumque undecim-costato, lineâ dorsali plus minusve elevatâ, interdum nigricanti, dorso a latere viso ab apice postico usque ad apicem cornus æqualiter et leviter rotundato, haud sinuato ; tegminibus hyalinis, venis fuscis ; pedibus testaceis, interdum ad partem fuscis, tarsis nigricantibus.

A small species, which viewed from the side appears to be slightly and evenly rounded from the anterior to the posterior apex, like the shape of an inverted canoe ; pronotal horn short and blunt and slightly deflexed, but straighter in some specimens than in others, with the sides carinated ; pronotum rather finely but distinctly punctured, as a rule with five carinæ on each side, dorsal carina more or less strongly elevated, sometimes blackish ; tegmina hyaline, with brownish veins ; legs mostly testaceous, with the tarsi blackish.

Long. 6 millim. (sine cornu 5 millim.); lat. max. 1½–1¾ millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Five specimens. At first sight this species looks very different to the two preceding, but it cannot well be separated from them generically.

ENTYLIA.

Entilia, Germar, Rev. Ent. Silb. iii. p. 247 (1835).

Entylia, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 299 (1846) (nec Burmeister, Rev. Ent. Silb. iv. p. 181).

The limits of this genus are very uncertain, and the synonymy is in great confusion owing to the variability of the species and the difficulty of distinguishing them by any constant characters. They are, as a rule, easily recognized by the deeply cut sinuation of the pronotum, which is compresso-elevate and more or less sharply carinate ; the differences, however, in a large series of specimens are very great, and the gradation so complete that it is impossible to define the species with any approach to certainty. Stål separates off *E. concava*, Germ., under a separate genus *Publilia*, characterized by having the back of the pronotum convex and only slightly depressed before or at the middle ; it is, however, doubtful whether the genus ought to stand,

as certain species of *Entylia* in their extreme forms come very close to it, and *Publilia porrecta* seems a further connecting form.

Germar described seven species, and Walker enumerated twelve: these Stål reduced to five (including *Publilia concava*); but Butler (Cist. Ent. ii. p. 210), after stating that he differs entirely from Stål in the synonymy which he gives to the species of the genus, reinstates three of Walker's species and adds two new ones, at the same time allowing that he would have no objection to considering the whole of the forms which he is discussing as varieties of one inconstant species; this I believe to be the best solution of the difficulty.

All the species hitherto described are from North, Central, or Tropical South America.

In considering this genus it ought perhaps to be noted that Burmeister (Rev. Ent. Silb. iv. p. 181, t. 36. fig. 8) has in some unaccountable way entirely mistaken Germar's characters for the genus, and identified it with what is really *Parmula* or an allied genus.

1. **Entylia sinuata.** (Tab. VIII. figg. 12, 12 *a*, *b*, var. *mira*.)

? *Cicada carinata*, Forst. Novæ Sp. Ins., Cent. i. p. 67 (1771) [1].
Entylia carinata, Glover, MS. Notes from my Journal, Hemipt. t. 1. fig. 26 [2].
Membracis sinuata, Fabr. Ent. Syst., Suppl. p. 513 (1798) [3].
Entylia sinuata, Germ. Rev. Ent. Silb. iii. p. 248 [4].
Entylia bactriana, Germ. loc. cit. p. 248 [5].
Entylia concisa, Walk. List of Homopt. Ins. ii. p. 547 [6].
Entylia decisa, Walk. loc. cit. p. 548 [7].
Entylia accisa, Walk. loc. cit. p. 548 [8].
Entylia indecisa, Walk. loc. cit. p. 549 [9].
Entylia reducta, Walk. loc. cit. p. 549 [10].
Entylia impedita, Walk. loc. cit., Suppl. p. 137 [11].
Entylia inæqualis, Butl. Cist. Ent. ii. p. 211, t. 3. fig. 7 [12].
Entylia mira, Butl. loc. cit. p. 211, t. 3. fig. 8 [13].

Hab. North America [2–11], Canada and United States, New York [1].—Mexico [13], Puebla (*Bilimek, in Mus. Vind. Cæs.*), Omilteme, Chilpancingo, and Amula in Guerrero, Cuernavaca in Morelos, Atoyac in Vera Cruz (*H. H. Smith*), Orizaba (*H. H. S. & F. D. G.; Bilimek*); Guatemala [12] (*Mus. Roy. Belg.*), Senahu, San Juan, Chiacam, and San Gerónimo in Vera Paz, Las Mercedes, Zapote, Guatemala city (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).—Brazil, Petropolis.

All the specimens in our collection belong to the form *E. inæqualis*, Butl., except four or five which must be referred to his *E. mira*, and three of a peculiarly coloured variety from Chiacam, Vera Paz. Its geographical range would seem to indicate that all the forms cannot belong to one species; but large series of specimens from various localities require to be examined before the question can be settled satisfactorily, and

meanwhile it is practically impossible to draw a hard-and-fast line of difference between any of the forms.

We figure a specimen of the form *E. mira*, Butl., from Orizaba.

2. **Entylia gemmata.**

Membracis gemmata, Germ. Mag. der Ent. iv. p. 16 [1].
Entylia gemmata, Germ. Rev. Ent. Silb. iii. p. 248 [2].
Entylia corniculata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 300, t. 5. fig. 31 [3].
Entylia incisa, Walk. List of Homopt. Ins. ii. p. 548 [4].

Hab. MEXICO (*coll. Signoret*); GUATEMALA, San Joaquin in Vera Paz (*Champion*).—VENEZUELA [3]; BRAZIL [1 2 4].

One of the specimens from San Joaquin has the front horn almost wanting and the back of the thorax scarcely sinuate, and closely resembles a *Publilia*.

PUBLILIA.

Publilia, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 553.

This genus was formed by Stål to receive *Entylia concava*, Germ., and is distinguished by having the back of the pronotum convex, only very slightly depressed in or before the middle. As above remarked, it is doubtful whether it will stand as a distinct genus from *Entylia*, although in facies it is very distinct from the ordinary forms of that genus.

1. **Publilia concava.**

Membracis concava, Say, in Long's Second Exped. ii. p. 301 (1824) [1]; Complete Writings, i. p. 200 [2].
Entylia concava, Germ. Rev. Ent. Silb. iii. p. 249 (1835) [3].

Hab. NORTH AMERICA, North West Territory [1].—MEXICO, Cuernavaca in Morelos (*H. H. Smith*, *Bilimek*), Amula in Guerrero (*H. H. Smith*), Guanajuato (*Mus. Roy. Belg.*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

2. **Publilia porrecta,** sp. n.

Quoad formam coloremque præcedenti simillima, sed cornu brevi lato porrecto, dorsoque pronoti ante cornu minus recto facile distinguenda.

In colour and general appearance closely resembling the preceding, but with a short and broad porrect horn in front, and with the back of the pronotum slightly sinuate and less straight before the horn; the colour is light brownish grey, with two more or less distinct lighter stripes on each side, and with a few very scattered small dark markings, which are often almost, if not entirely, absent.

Long. cum cornu pronoti 5 millim.; lat. 2 millim.

Hab. MEXICO (*Bilimek, in Mus. Vind. Cæs.*).

A considerable series of specimens. This insect looks as if it were merely a variety

of *P. concava*, but it is probably distinct; the porrect horn is not a sexual difference. *P. porrecta* is closely allied to *Entylia*, and ought perhaps to be placed at the end of that genus; in this case, however, *P. concava* could hardly be formed into a separate genus, and would have to be included, as of old, under *Entylia*.

METHEISA, gen. nov.

Elongata, capite longitudine haud multo latiori, oculis prominulis, metopidio simplici, vel protuberante, vel in cornu breve porrectum extenso; pronoto subparallelo, angustato, distincte costato, ad apicem sensim angustiori, apice acuto usque ad apicem tegminum producto, humeris leviter acute prominulis, dorso a latere viso fere recto vel in medio leviter sinuato, apicem versus sensim levissime deflexo; tegminibus parte fere dimidiâ intectâ, areis apicalibus quatuor, discoidalibus duabus, alis areis apicalibus quatuor, discoidali nullâ; pedibus teretibus, tarsis posterioribus sat elongatis.

Elongate and subparallel, gradually narrowed towards the apex of the pronotum, which is acute and just reaches the apex of the tegmina; head rather large, eyes prominent; metopidium simple and rounded in front or forming a right angle with the hinder part of the pronotum, or slightly protuberant, or with a distinct short horn projecting from its front; upper surface of the pronotum costate, the shoulders distinctly and sharply but minutely prominent; distance from the dorsum to the margin narrow; dorsum straight or slightly sinuate in the middle if viewed from the side; tegmina with four apical and two discoidal areas; wings with four apical areas and no discoidal area; areas of tegmina mostly oblong, the third apical area, however, is more or less semicircular and stylate; basal costal portion of the tegmina opaque and punctured; legs slender, the posterior tarsi elongate.

This genus is closely allied to *Entylia* and *Publilia* on the one hand, and to *Hille* and *Lucilla* on the other. As will be noticed from the description, it is very variable as regards the shape of the front part of the pronotum; the difference appears to be in no way sexual, as there are females in our collection with and without the frontal horn.

1. **Metheisa lucillodes,** sp. n. (Tab. VIII. figg. 13, 13 *a*.)

Colore variabili, viridi vel viridi-testaceo vel fusco vel fere nigro, cornu pronoti (ubi adest) infuscato; capite fortius punctato, inter ocellos impresso; pronoto dense sat fortiter punctato, carinâ centrali distinctâ, costisque quatuor vel quinque (interdum abbreviatis) instructo; corpore subtus et parte opacâ tegminum cum colore dorsi congruente, pedibus testaceis, raro infuscatis.

Very variable in colour, green or greenish-testaceous, fuscous or almost black (the darker specimens showing traces of one or two lighter bands), with the frontal horn of the pronotum, where present, in all cases infuscate; pronotum thickly and rather strongly punctured, with a distinct central keel, and with four or five more or less regular and in some cases abbreviated costæ on each side; the underside and the opaque and punctured part of the tegmina appear to agree in colour with the colour of the upper surface, but the legs are nearly always testaceous, sometimes in part infuscate.

Long. 4–5 millim.; lat. int. hum. $1\frac{3}{4}$–2 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 6000 feet (*Champion*).

The discoidal areas of the tegmina are usually equal in size, but in some cases the exterior one is very small.

This insect is very like small specimens of *Lucilla viridula*, but in that species the dorsum is slightly protuberant behind, and not in front of, the shoulders.

OXYGONIA.

Oxygonia, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 301 (1846).
Ennya, Stål, Berl. ent. Zeitschr. x. p. 387 (1866).
Hille, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 235 (ex parte).

The genus *Ennya* is separated by Stål from *Hille* on the ground that the corium is destitute of a discoidal area; but this is incorrect, for the specimens of *Oxygonia chrysura* which I have seen (which species, together with *O. rufipes*, Stål apparently regards as the typical species of *Ennya*) have mostly one discoidal area at least present, and occasionally two; the tegmina, however, in the group appear to vary in this respect in the same specimens, and a thorough revision of the whole is very necessary.

It is by no means clear why Stål should have adopted the name of *Ennya* as a genus for the reception of *Oxygonia rufipes* and *O. chrysura*, for *O. rufipes* is apparently Fairmaire's type species of *Oxygonia* (*l. c.* p. 303). I have therefore preferred to retain the name *Oxygonia* instead of *Ennya* for the species below referred to.

1. **Oxygonia chrysura.**

Oxygonia chrysura, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 302 [1].
Ennya chrysura, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 237 [2].
Oxygonia auriflua, Walk. List of Homopt. Ins. ii. p. 550 [3].

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*). — Colombia, Bogota [1]; Venezuela [3].

ADIPPE.

Oxygonia, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 301 (1846) (ex parte).
Adippe, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 555.

This genus is chiefly distinguished from *Oxygonia* in having the outline of the pronotum, if viewed from the side, evenly rounded, and the shoulders not, or scarcely, prominent; the species, as a rule, are very distinct, and in several cases brightly coloured.

1. **Adippe zebrina.** (Tab. VIII. figg. 14, 14 *a*.)

Oxygonia zebrina, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 305 [1].
Adippe zebrina, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 234 [2].
Oxygonia figurata, Walk. List of Homopt. Ins., Suppl. p. 137 [3].

Hab. Mexico (*Sallé* [3]; *Mus. Vind. Cæs. & Mus. Roy. Belg.*), Teapa in Tabasco (*H. H. Smith*); Guatemala, El Tumbador, Las Mercedes, Purula (*Champion*).—Venezuela [1].

In the Vienna Museum collection there is a specimen of Signoret's under the MS. name of *Adippe vicina*, which is a slight variety of this species.

An example from Purula is figured.

2. **Adippe maculata.** (Tab. VIII. figg. 15, 15 *a*.)

Adippe maculata, Distant, Ent. Monthly Mag. xvi. p. 11 [1].

Hab. Nicaragua, Chontales (*Janson*); Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers* [1]); Panama, Volcan de Chiriqui 2500 to 6000 feet (*Champion*).

Mr. Distant described this species from a single poor example, and it was only after a close examination that I came to the conclusion that the other specimens referred to belonged to the same species; they only differ, however, in the dark markings of the head and metopidium, which he describes as follows:—"Head and frontal portion of the pronotum luteous, the last with two small black spots placed transversely and close together on the centre immediately above the head, and a central fascia of the same colour above these on the disc." In all the other specimens I have seen the black markings of the metopidium consist of two broad curved bands which meet the post-humeral fascia of the pronotum, and are occasionally joined at the point at which they approach nearest to one another by another frontal fascia; they show, however, slight signs of variation, and in the type example almost disappear. Mr. Distant is also wrong with regard to the tegmina, which he describes as "black, with a large hyaline spot a little before the apex"; they are large and hyaline, with the exterior margin only broadly dark, the portion towards the base, as is usual in this genus, being opaque and strongly punctured and coloured after the fashion of the pronotum, though the black colour is always more prevalent; a little before the apex of the margin there is a hyaline spot.

We figure a specimen from Chontales.

3. **Adippe pardalina,** sp. n. (Tab. VIII. figg. 16, 16 *a*.)

Flavo-rufescens vel flava, capite subcordato unicolori, pronoto fortius punctato, sparsim pubescenti, humeris prominulis nigris, metopidio vittis duabus latis obliquis nigris, dorso maculis quatuor nigris, maculâ ante apicem ad marginem utrinque productâ, sinuatâ, ceteris a marginibus et inter se disjunctis, apice et unâ vel duabus maculis utrinque ad marginem nigris; tegminibus hyalinis, margine exteriori ad basin opacâ, punctatâ, nigrâ, flavo-variegatâ, maculâque ante apicem fuscâ; abdomine brunneo; pedibus nigris, ad partem brunneis.

Of a yellowish-red or yellow colour, with the head unicolorous, and the pronotum with the shoulders, two oblique bands on the metopidium (approaching one another just above the head), three bands behind these separate from the margins and from one another, a sinuate band before the apex reaching right across from margin to margin, the apex, and two spots at the margins (the one near the shoulders being usually very small), black; surface of the pronotum strongly punctured, with a very distinct short oblique carina on each side of the central carina just behind the middle; tegmina hyaline, with the exterior margin towards the base broadly opaque and punctured, black, variegated with yellow, and with a fuscous spot before the apex; underside brown; legs black, with more or less distinct brownish rings, and the tarsi mostly brown or reddish-brown.

Long. 5–6½ millim.; lat. int. hum. 2½–3 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A fair series. This is a very distinct species; it is variable in size and in depth of colour.

4. **Adippe histrio.** (Tab. VIII. figg. 17, 17 *a*.)

Oxygonia histrio, Walk. Ins. Saund., Homopt. p. 71 (1858) [1].
Adippe histrio, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 234 [2].

Hab. Mexico [1].—Colombia, Bogota [2]; Venezuela.

This species is not represented in our collection, and, as will be noticed, is only doubtfully recorded by Walker from Mexico. The bright red head and metopidium and the very broad dark stripes on the yellow pronotum make it the most conspicuous and striking insect belonging to the genus.

5. **Adippe concinna,** sp. n. (Tab. VIII. figg. 18, 18 *a*.)

Brevior, sat robusta; capite flavo-virescenti, lineâ centrali longitudinali nigrâ, pronoto dense et distincte punctato, sparsim pubescenti, utrinque ad medium impresso, humeris prominulis, a dorso viso æqualiter rotundato, fere semicirculari, virescenti, supra humeros et pone medium flavo, carinâ centrali antice et ad apicem, duabus lineis angustis fere semicircularibus a margine frontali metopidii usque ad latera pone medium, lineâque alterâ Λ-formatâ ante apicem, humerisque ad extremum apicem, nigris; tegminibus hyalinis, margine exteriori ad majorem partem opacâ, punctatâ, nigro-viridi variegatâ, et apice plus minusve infuscato; corpore subtus pedibusque viridi-testaceis.

A rather short species, with the pronotum of a green colour, variegated above the shoulders and on more or less of the disc with yellow, and with a thin black line extending from the front of the head to the middle along the central carina; the line is here interrupted, but is present again at the apex; the shoulders are distinctly, though slightly, prominent, and are black at the apex, and on each side above the shoulders reaching from the front margin of the metopidium to the margin of the pronotum just behind the middle there is a thin central black line, which is almost semicircular, and before the apex is a Λ-shaped line reaching from margin to margin, the apex of which is sometimes acute and sometimes rounded; tegmina hyaline, with the greater part of the exterior margin opaque and coloured like the pronotum, except that the dark colour usually prevails, and with a fuscous patch at the apex; underside and legs clear greenish-testaceous; probably the green colour is much more vivid in life, and the under surface and legs are bright green.

Long. 5 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

A small and somewhat variable series. This is a very distinct and pretty little species, and cannot be confused with any other that I have seen.

6. **Adippe inconspicua,** sp. n. (Tab. VIII. figg. 19, 19 *a*.)

Præcedenti affinis, sed unicolor, virescens vel fusco-virescens, partibus anticis dilutioribus, et pronoto minus æqualiter rotundato, supra viso antice prominulo, metopidio fere recto; tegminibus hyalinis, margine exteriori ut in præcedentibus; corpore subtus brunneo-testaceo; pedibus testaceis.

Of a dull green or fuscous colour, with the head and metopidium and sometimes the space above the shoulders much lighter, yellowish-green; pronotum less evenly rounded than in the preceding species, forming more of an angle at the commencement of the metopidium, which is almost straight; if viewed from above there is a distinct blunt angular projection of the central carina; the sides have the ribs between the punctuation more distinct and regular than is usual in the genus, but in this the species appears to vary; tegmina hyaline, with the exterior margin mostly opaque and punctured and coloured like the elytra, and with a fuscous spot just before the apex; underside brownish-testaceous; legs testaceous.

Long. 5 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. PANAMA, David in Chiriqui (*Champion*).

Four specimens, two of which are much darker than the others, but this is evidently due to discoloration. The sculpture is somewhat variable. In general appearance this species very closely resembles *Amastris obtegens*, F., which appears to be identical with, or very closely allied to, *Thelia tacta*, Walk., but is easily separated by the entirely different venation of the tegmina. The genus *Thelia*, according to Walker, is made up of the most discordant elements, and includes species belonging to *Antianthe* (*Ianthe*), *Stictocephala*, *Carynota*, *Amastris*, *Telamona*, *Aconophoroides*, and other genera, the mixture of which has caused very great confusion, which has been worse confounded by Stål neglecting purposely or accidentally to verify Walker's work in certain cases.

7. **Adippe inæqualis**, sp. n. (Tab. VIII. figg. 20, 20 *a*.)

Brunnea vel rufo-brunnea, haud nitida, pronoto inæquali plus minusve late nigro- vel nigro-brunneo-notato, sat fortiter subrugose punctato, carinâ centrali acutâ a latere visâ rotundatâ leviter sinuatâ, et carinâ alterâ acutâ abbreviatâ inter hanc et humeros prominulos instructâ ; tegminibus hyalinis, margine exteriori late brunneâ, punctatâ, ante apicem fuscâ ; corpore subtus brunneo ; pedibus testaceis, ad partem infuscatis.

A small species of a lighter or darker brown, rufous-brown, or brick-red colour, variegated with darker colour ; dull, with the pronotum, if viewed from the side, evenly rounded and only very slightly sinuate, but if viewed from above uneven, with a strong central carina and two almost equally strong abbreviated carinæ on each side of it, and traces of other costæ beneath these ; the punctuation is close and distinct ; tegmina hyaline, with the exterior margin broadly opaque, except before the apex, with the usual fuscous patch near the apex ; underside brown ; legs testaceous, more or less infuscate.
Long. 4–4½ millim. ; lat. int. hum. 2 millim.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*) ; PANAMA, Bugaba, Volcan de Chiriqui 2500 to 6000 feet, Peña Blanca 3000 to 4000 feet (*Champion*).

According to Stål's definition of the genus, this species is intermediate between *Oxygonia* and *Adippe*, as it is strongly carinated on each side of the central keel. The general structure of the insect, however, is too near that of the preceding to separate it, and it must be regarded as a connecting-link between these genera. It is very variable in colour, the dark tint sometimes covering all the front part of the pronotum, and sometimes being almost absent ; at the apical portion of this colour there is often a more or less defined lighter band, behind which the apex is broadly and uniformly testaceous, the separation being very abrupt ; occasionally, however, the colour is lighter in front and is terminated by a dark band. The single specimen from Peña Blanca presents some differences, and may eventually have to be referred to a separate species.

An example from Bugaba is figured.

8. **Adippe grisea**, sp. n.

Elongata, pronoto leviter punctato, brunneo-griseo, metopidio brunneo-marmorato, et dorso obscure variegato, fere unicolori, carinâ centrali a latere visâ æqualiter rotundatâ, costisque quibusdam utrinque plus minusve

regulariter a humeris prominulis ad apicem extensis; tegminibus ut in specie præcedenti; corpore subtus pedibusque testaceis.

Elongate and proportionally narrow, with the pronotum subparallel in front and gradually narrowed behind, finely punctured, with a central keel which is well marked, and, if viewed from the side, rather flatly but evenly rounded, of a brownish-grey colour, marbled on the metopidium with darker colour and obscurely variegated on the rest of the surface; on either side there are more or less regular costæ; tegmina as in the preceding species; underside and legs testaceous.

Long. 5 millim.; lat. int. hum. 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

The long and narrow shape and general sculpture will easily distinguish this insect from the preceding.

ANTIANTHE, nom. nov.*

Janthe, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 554 (nec Marseul, 1865).

This genus comprises three or four species from Central or Tropical South America. They may be known by the strongly elevated pronotum, which is highest in front and covers a considerable portion of the tegmina, and the sharp horizontal pronotal horns, and by the fact that the corium has two discoidal areas. The apex of the hind tibiæ and the tarsi are peculiarly spined, as shown on Tab. VIII. fig. 21 *b*. It is hard to determine how many species are really distinct, as they lead one into the other; this is especially noticeable in a large series, such as that in our collection, which numbers more than two hundred examples. The size is very variable, but the males appear to be always considerably smaller than the females from the same locality.

1. **Antianthe expansa.** (Tab. VIII. figg. 21, 21 *a*, *b*.)

Hemiptycha expansa, Germ. Rev. Ent. Silb. iii. p. 245 [1].
Thelia expansa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 309 [2].
Janthe expansa, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 554 [3].
Hemiptycha cucullata, Burm. Handb. Ent. ii. p. 140 [4].

Hab. NORTH AMERICA, California.—MEXICO [1 2 4], Omilteme and Xautipa in Guerrero, Cuernavaca in Morelos, Fortin in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Jalapa (*F. D. G.*), Orizaba (*F. D. G. & H. H. S.*), Atoyac in Vera Cruz (*Schumann*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, Panzos, Cubilguitz, and San Gerónimo in Vera Paz, San Isidro, Cerro Zunil, Guatemala city (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Volcan de Irazu, Rio Sucio (*Rogers*); PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA [2], Bogota.

Of this species we have received a large series of both sexes from Orizaba and Atoyac; some of the examples from Teapa and Chiriqui are very small. It appears to be one of the commonest and most widely spread of all the Homoptera in Central

* *Vide supra*, p. 89.

America. I have only seen one specimen from California, which is from Signoret's collection.

An example from Atoyac is figured.

Var. **humilis**, v. n.

Multo minor, dorso vix antice elevato, rotundato, cornibus obtusiusculis brevioribus.

A very small variety, with the dorsal ridge scarcely, if at all, elevated in front, and more or less evenly rounded, and the horns of the pronotum much shorter and blunter than in average specimens of the type form. Long. cum tegm. 6–7 millim.; lat. int. corn. vix 4 millim.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*); GUATEMALA, San Gerónimo (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

If the large series from Yucatan stood alone, I should have no hesitation in describing them as a distinct species; but the front part of the pronotum is slightly more elevated in some of the specimens from Chontales and San Gerónimo, and these again lead on to others which may be classed either with the type or the variety, and also to small male specimens of the type form from Atoyac, Orizaba, &c., so that a series can be arranged with the transition complete.

2. **Antianthe viridissima.**

Thelia viridissima, Walk. List of Homopt. Ins., Suppl. p. 138 (1858) [1].

Thelia reversa, Walk. Ins. Saund., Homopt. p. 72 (1858) [2].

Hab. MEXICO [1 2] (*Bilimek, in Mus. Vind. Cæs.*), Mexico city (*H. H. Smith*).—COLOMBIA, Bogota.

Of this species we have received two males and three females from Mexico. It differs from *A. expansa* in having the pronotum less elevated in proportion in front; the pronotum therefore appears lower if viewed from the side, and slopes much less abruptly in a straight line to the apex, which is apparently longer. In the Vienna Museum collection the specimens under *A. expansa* belong to this species, whereas a large number of the true *A. expansa* are unnamed.

3. **Antianthe foliacea.**

Smilia foliacea, Stål, Stett. ent. Zeit. 1864, p. 71 [1].

Janthe foliacea, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 554 [2].

Hab. MEXICO (*Mus. Holm.*[1]), Puebla and Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Chiapas (*Mus. Brit.*); GUATEMALA (*Mus. Roy. Belg. & coll. Signoret*), San Juan and San Gerónimo in Vera Paz (*Champion*); COSTA RICA (*Van Patten*).—BRAZIL.

The large size and strongly elevated and almost semicircularly rounded pronotum will easily distinguish this species.

GODINGIA, gen. nov.

Sat lata, robusta; capite longitudine latiori, ocellis inter se quam ab oculis minus distantibus, oculis magnis prominulis; pronoto antice depresso, lato, metopidio vix declivi, utrinque ad latera fortiter impresso, postice sensim angustato, deinde abrupte in processum apicalem brevem contracto, carinâ centrali postice distinctiori, dorso a latere viso fere æquali, sed mox ante apicem abrupte depresso; tegminibus plerumque intectis, corio areis apicalibus quinque (tertiâ stylatâ), discoidali unâ, alis areis apicalibus quatuor (secundâ stylatâ); pedibus cylindricis, tarsis modicis, æqualibus.

Rather broad and robust; head broader than long, triangularly produced in front; ocelli set far forward, nearer to one another than to the eyes, which are large and prominent; pronotum depressed and convex in front, with the metopidium very gradually declivous, broad almost to the apex and then abruptly narrowed to a short broad point; dorsum depressed and almost level from above the shoulders, which are slightly and obtusely prominent, until near the apex, where it is suddenly depressed and unites with the short apical process; central carina more distinct behind than in front; sides with a strong broad impression on each extending from the shoulders to behind the middle, where they meet the dorsal carina, which is at the point very distinct; tegmina ample, extending some way beyond the apex of the pronotum; corium with three veins proceeding from near the base, the ulnar veins not being united by a transverse venule, with five apical areas and one discoidal, the third apical area being triangular and stylate; wings with four apical areas, the second triangular and stylate; clavus and a small part of the corium covered by the pronotum; legs cylindrical.

This genus is allied to *Optilete*, but differs in general shape, in the absence of a second discoidal cell on the tegmina, and in the shape of the second apical area of the wing, which in *Optilete* is oblong and not stylate. Its chief affinities perhaps are towards *Smilia*, from which it may at once be known by the shape of the pronotum, which in the latter genus is strongly elevated, compressed, acute, and highest in front.

I have much pleasure in naming this genus after Dr. Goding, as a slight acknowledgment of the help he has given me.

1. **Godingia guerreroensis**, sp. n. (Tab. VIII. figg. 22, 22 *a*, ♀; 23, 23 *a*, ♂.)

Nigra vel fusco-picea, plus minusve nitida, capite testaceo, nigro- vel fusco-notato; pronoto distincte densius punctato, levissime pubescenti, marginibus ad humeros, et maculâ magnâ obliquâ ad medium latera attingenti, et apice, albis vel albidis; tegminibus hyalinis, venis fuscis, apicem versus sæpius testaceis, apice fumoso; pedibus abdomineque testaceis, hoc interdum ad partem infuscato.

Mas. Niger, magis nitidus, disco pronoti minus fortiter punctato, apiceque breviori, albo, nigro-limbato.

Femina. Fusca, minus nitida, disco prothoracis fortius densiusque punctato, apice longiori albido.

Black or fusco-piceous, with the head and front part of the metopidium testaceous, variegated with darker colour; pronotum very finely pubescent, the pubescence being easily rubbed off, with the margins at the shoulders, and a large oblique patch at the middle reaching the sides, and the apex, white or whitish; tegmina hyaline, with the veins fuscous, in part testaceous towards the apex, apex broadly infuscate, extreme base strongly punctured; legs and abdomen testaceous, the latter sometimes in part infuscate.

The *male* is shining black, less closely punctured than the female, with the markings clear white and the apex of the pronotum shorter and bordered with black.

The *female* is fusco-piceous, somewhat variegated with piceous, with the edges of the whitish markings darker, and is more closely and strongly punctured on the disc than the male, with the apex of the pronotum longer.

Long. cum tegm. 10 millim.; lat. int. hum. 4 millim.

Hab. MEXICO, Xucumanatlan 7000 feet and Omilteme 8000 feet, both in Guerrero (*H. H. Smith*).

Three females from Xucumanatlan and a male from Omilteme. One of the female specimens is almost entirely testaceous, but this is, apparently, due to its not being quite mature.

We figure a male from Omilteme and a female from Xucumanatlan.

ATYMNA.

Atymna, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 554.

This genus is very closely allied to *Cyrtolobus*, and perhaps ought not to be separated from it. It bears just the same analogy to the last-named genus that *Amastris* bears to *Vanduzea*.

1. **Atymna castaneæ.**

Smilia castaneæ, Fitch, Third Report on the Noxious, Beneficial, and other Insects of the State of N. York, p. 152 (1856) [1].

Atymna castaneæ, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 555 [2].

Hab. North America, New York [1].—Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

One discoloured female specimen from Chihuahua. This has been compared by Dr. Goding with a typical example of *Smilia castaneæ*, Fitch, and he informs me that it only differs in having a smoky band at the apex of the tegmina, a character in which certain allied species are somewhat variable.

CYRTOLOBUS.

Cyrtosia, Fitch, Fourth Ann. Report of the State Cab. of Nat. Hist. no. 30, p. 49 (1851) (nec Perris, 1839).

Cyrtolobus, Goding, Trans. Am. Ent. Soc. xix. p. 257 (1892).

This genus, as well as *Atymna*, belongs to the group which has the apical area of the wings stylate, and not sessile as in *Telamona*; it is closely allied to *Smilia* and *Antianthe*. The tegmina have two discoidal areas, as in *Antianthe*, in *Smilia* one only is present.

The differences between some of the species are obscure, and it is difficult to determine with certainty, until more specimens are discovered, which of them ought to be regarded as having true specific value.

1. **Cyrtolobus cristifer.** (Tab. VIII. figg. 24, 24 *a*.)

Smilia cristifera, Stål, Stett. ent. Zeit. 1864, p. 71 [1].

Cyrtosia cristifera, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 554 [2].

Hab. Mexico, (*coll. Signoret* [1], *in. Mus. Vind. Cæs.*).

This is the largest species of the genus known to me, and it has the dorsum more strongly raised than any other. *C. cristifer* is not represented in our collection.

2. **Cyrtolobus discoidalis.** (Tab. VIII. figg. 25, 25 *a*, *b*.)

Gargara discoidalis, Emmons, Agriculture of New York, v. p. 157 (1854) [1].
Smilia carinata, Stål, Stett. ent. Zeit. 1864, p. 71 [2].
Cyrtosia carinata, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 554 [3].

Hab. Mexico (*coll. Signoret* [2], *in Mus. Vind. Cæs.*), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

The single example in our collection is identical with the specimen labelled *Atymna carinata* in the Vienna Museum collection, and Dr. Goding has returned it to me as *Cyrtosia discoidalis*, Emmons. I have not myself seen a typical specimen of the last-mentioned insect.

The specimen in the Vienna Museum is figured.

3. **Cyrtolobus virescens,** sp. n. (Tab. IX. figg. 1, 1 *a*.)

Elongatus, angustatus, viridi-testaceus, capite subrugoso, remote punctato, pronoto fortius, haud profunde, punctato, carinato, antice convexo, leviter depresso, dorso fere æquali, humeris vix prominulis, lateribus utrinque impressis, apice curvatim deflexo; tegminibus hyalinis, ad basin virescentibus, punctatis; corpore subtus pedibusque totis testaceis.

An elongate and narrow species, of a greenish-testaceous colour, perhaps bright green in life, with the pronotum subrugosely and rather strongly, but not deeply, punctured; shoulders scarcely prominent; dorsum, if viewed from the side, almost even, carinate, slightly depressed in front, sides broadly impressed, apex rather long, deflexed; tegmina hyaline, greenish and rather strongly punctured at the extreme base; underside and legs testaceous.

Long. 9 millim.; lat. int. hum. $3\frac{1}{2}$ millim.

Hab. Mexico (*Mus. Oxon.*), Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*).

In the specimen from Xucumanatlan there are two very obscure lighter bands behind the middle and before the apex; but it is often almost impossible in the case of these greenish-testaceous species to determine what was the real colour in life.

4. **Cyrtolobus distinguendus,** sp. n.

Testaceus, castaneo-brunneo obscure variegatus, pronoto sat fortiter denseque punctato, dorso elevato, utrinque impresso, a latere viso æqualiter rotundato a fronte metopidii usque ad pone medium, ibi sinuato, depresso, et in apicem haud longum paullo deflexum extenso; tegminibus prothoracis apicem multo superantibus, totis hyalinis; corpore subtus pedibusque dilute testaceis.

Slightly smaller than the preceding species, testaceous, obscurely variegated with castaneous or rufous-brown; pronotum closely and strongly, and in parts subrugosely, punctured, impressed at the sides; dorsum carinate, evenly rounded from just above the head to behind the middle, and then considerably depressed and sinuate and produced into a rather short apex; tegmina entirely hyaline; underside and legs light testaceous.

Long. cum tegm. $8\frac{1}{2}$ millim.; lat. int. hum. $3\frac{1}{4}$ millim.

Hab. Mexico, Amula in Guerrero 6000 feet (*H. H. Smith*).

One female specimen.

5. **Cyrtolobus vittatipennis,** sp. n.

Brunneo-castaneus, colore dilutiori, fere unicolor; pronoto fortiter sat dense punctato, utrinque distincte impresso, dorso a latere viso inæquali, antice depresso, ad medium late paullo elevato, deinde post medium sinuatim depresso, et in apicem obtusum extenso, carinâ distinctâ, fusco-testaceoque variegatâ; tegminibus testaceo-hyalinis, vittâ magnâ nigro-brunneâ ad apicem alterâque ad medium, convergentibus, et partem vitreo-hyalinam includentibus; corpore subtus pedibusque testaceis.

Of a light castaneous-brown colour, almost unicolorous, except for the dorsal carina, which is variegated with fuscous and testaceous; pronotum strongly punctured and deeply impressed on each side; dorsum, if viewed from the side, uneven, sinuate, and depressed in front, then slightly elevated for some distance, and behind the middle again depressed and produced into a blunt apex; the tegmina are punctured at the base and are testaceo-hyaline, with two large dark bands almost meeting and enclosing a vitreous portion on the exterior margin; in lighter specimens these bands are obscure, but the vitreous or testaceous portions appear distinctly separated; underside and legs testaceous.

Long. cum tegm. 8 millim.; lat. int. hum. 3 millim.

Hab. MEXICO, Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*); GUATEMALA, Quiché Mountains 7000 to 9000 feet (*Champion*).

The shape of the dorsum easily distinguishes this species from the preceding. Two female specimens.

6. **Cyrtolobus inæqualis,** sp. n. (Tab. IX. figg. 2, 2 *a*.)

Præcedenti affinis, sed colore griseo piceo-variegato, pronoto ad latera profundius impresso, dorso antice multo magis elevato, posticeque abruptius sinuatim depresso, tegminibusque vitreo-hyalinis, ad apicem fumosis, venis fuscis apicem versus dilute testaceis, valde differt.

Closely allied to the preceding, and possibly the male of it, as one of the specimens of *C. vittatipennis* comes from the same locality; it is griseous in colour, with close and moderately strong fuscous punctuation, and with the pronotum variegated with dark fuscous-brown; the dorsum is much elevated in front, and reaches its highest point a little behind the shoulders, from whence it sinks abruptly and somewhat sinuately to behind the middle, and from thence is extended into a moderately long and blunt apex, which is strongly impressed at the base, the sides being very strongly impressed just in front of this; tegmina punctured at the base, clear hyaline, with the apex smoky and the veins almost black, but quite light at the extreme apex; abdomen dark above, testaceous below; legs testaceous.

Long. cum tegm. $8\frac{1}{2}$ millim.; lat. int. hum. $3\frac{1}{2}$ millim.

Hab. MEXICO, Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*).

One male specimen. This insect certainly seems very distinct from any other *Cyrtolobus* I have seen, although, as above stated, it may prove to be the male of the preceding; I hardly think, however, that this will be found to be the case.

It will be noticed that nearly all the specimens here referred to come from elevated districts, and that they are represented by very few specimens; they evidently form a very difficult, though interesting group, and it is much to be hoped that more specimens may be found by future collectors.

OPHIDERMA.

Ophiderma, Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 473 (1846).

This genus is distinguished by the broad convex dorsum, the approximate ocelli, and

the subtriangular and stylate apical third cell of the tegmina; the shoulders are very slightly prominent, and the sides of the pronotum are very gradually and evenly rounded to the apex, which is very blunt and reaches nearly to the apex of the tegmina.

1. **Ophiderma mus,** sp. n. (Tab. IX. figg. 3, 3 *a*.)

Latius, sat robustum, capite magno subtiliter punctato, testaceo; pronoto densius fortiusque punctato, murino, vel griseo-purpureo, griseo-variegato, lineâ centrali elevatâ nigrâ, punctisque plerumque obscuris, humeris vix prominulis, dorso a latere viso leviter sed distincte sinuato, ante medium perpaullo elevato; tegminibus hyalinis, basin versus punctatis, basi medio et apice plus minusve infuscatis; pedibus testaceis.

A broad and robust species; head large, finely punctured, and the eyes large and not very prominent; pronotum of a greyish-purple or mouse-colour obscurely variegated with grey, with a dark central line, and with the colour obscurely arranged in bands of irregular breadth behind the middle; punctuation close and rather strong, finer on the metopidium, the punctures being for the most part dark; shoulders very slightly prominent; dorsum, if viewed from the side, feebly but distinctly sinuate, very slightly raised a little before the middle and scarcely depressed in the centre; tegmina hyaline, with the basal half more or less punctured, and with a fuscous patch at the apex, and a testaceous band, fuscous externally, in the middle; legs testaceous, claws and apex of the tibiæ infuscate.

Long. 7 millim.; lat. int. hum. $3\frac{1}{2}$ millim.

Hab. GUATEMALA, Quiché Mountains 7000 to 9000 feet (*Champion*).

HILLE.

Hille, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 555; ibid. 1869, p. 235.

The single species referred to this genus scarcely differs from *Oxygonia*, except in the form of the dorsum, and it ought, perhaps, to be included under it, as the character afforded by the presence or absence of a discoidal area on the corium is of doubtful value.

1. **Hille pacifica.**

Oxygonia pacifica, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 302 [1].
Hille pacifica, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 237 [2].

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).—BRAZIL [1], Botafogo and Rio Janeiro.

The Panama insect is rather larger and more strongly sculptured than any specimen of *H. pacifica* I have seen, but it can scarcely be regarded as belonging to a separate species.

TELAMONA.

Thelia, Amyot et Serville, Hist. des Ins. Hém. p. 540 (1843) (ex parte); Fairmaire, Ann. Soc. Ent. Fr. sér. 2, iv. p. 305 (ex parte); Walker, List of Homopt. Ins. ii. p. 554 (ex parte).
Telamona, Fitch, Fourth Ann. Report of the State Cab. of Nat. Hist. no. 30, p. 50 (1851).
Heliria, Stal, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 556.

This genus, as here constituted, contains a considerable number of species, which

appear to be confined to the New World. They differ very considerably in facies, but it is hard to draw a line between them in the present state of our knowledge; I have, therefore, thought it best to include *Heliria*, which was separated off by Stål entirely on the form of the dorsal protuberance.

1. **Telamona excelsa.** (Tab. IX. figg. 4, 4 *a*.)

Thelia excelsa, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 310[1].

Hab. Mexico (*coll. Signoret*[1] *& Sichel, in Mus. Vind. Cæs.*).

This is a large and very remarkable insect, the pronotum being very strongly, broadly, and evenly elevated for the greater part of its extent.

2. **Telamona mexicana.** (Tab. IX. figg. 5, 5 *a–c*.)

Telamona mexicana, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 249[1].

Hab. Mexico (*Mus. Holm.*[1]).

This species, though considerably smaller than the preceding, and in many points different, is yet certainly allied to it. We are indebted to Dr. Aurivillius for the opportunity of figuring the typical specimen in the Stockholm Museum.

3. **Telamona cristata.** (Tab. IX. figg. 6, 6 *a*.)

Thelia cristata, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 311[1].

Heliria cristata, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1867, p. 556[2].

Hab. Mexico (*coll. Signoret*[1], *in Mus. Vind. Cæs.*).

This is a very curious-looking insect, very different from the two preceding, and closely related to the species that follow.

4. **Telamona sinuata,** sp. n. (Tab. IX. figg. 7, 7 *a*, ♂.)

Præcedenti affinis, sed paullo major, humeris multo magis prominentibus, late auritis, protuberantiâque dorsali antice magis quam postice elevatâ ad medium sinuatâ, angulo antico late rotundato, postico acuto; colore griseo vel albido-griseo, fusco-variegato; tegminibus hyalinis, apicem versus fuscatis, venis fuscis partim brunneis.

Very like the preceding, but rather larger, and easily known by the much more broadly prominent shoulders, and by the shape of the dorsal protuberance, which is more raised in front (where it forms a second rounded protuberance) than behind, and is sinuate in the middle, the hinder angle being acute; the colour is griseous, variegated with fuscous.

Long. cum tegm. 11 millim.; lat. int. hum. 7 millim.

Hab. Mexico, Amula 6000 feet and Xucumanatlan 7000 feet, both in Guerrero (*H. H. Smith*).

A male from Amula and a female from Xucumanatlan. This species appears to be closely allied to *T. tristis*, Fitch, as well as to *T. salvini*, Dist., and *T. spreta*, Goding.

The male is figured.

5. **Telamona salvini.**

Telamona salvini, Dist. Ent. Monthly Mag. xvi. p. 11 (1879) [1].

Hab. GUATEMALA, Chinautla 4100 feet (*Salvin* [1]), Guatemala city (*Champion*).

The specimens from the two localities differ somewhat *inter se*, and may belong to two different species. The insect is distinguished by the truncate dorsal process; it is very closely allied to *T. spreta*, Goding, and is perhaps not really distinct from it. The latter species has the dorsal protuberance broadly and evenly truncate as in *T. salvini*, but it is set further back from the metopidium and has the two apical angles rounded; in *T. salvini* the hinder angle is sharp and somewhat produced, and the front angle is more broadly rounded.

The colour of this species, like that of the other members of the genus, is variable; the pronotum in the type specimen is almost unicolorous brown, with darker markings behind, whereas in the example from Guatemala city it is much mottled with griseous and fuscous-brown.

6. **Telamona albidorsata,** sp. n. (Tab. IX. figg. 8, 8 *a*.)

Fusco-picea, nitida, pronoto fortiter, postice rugosius, punctato, ad latera maculis minutis albidis irrorato et dorso fere ab apice protuberantiæ ad apicem posticum sat late albido, illâ elevatâ, simplici, vix porrectâ, apice rotundato, antice abrupte in metopidium sinuatim declivi, postice lenius in processum posticum mergente, apice hujus nigro, humeris obtusis, leviter prominulis; tegminibus apicem prothoracis superantibus, parte apicali infuscatâ; pedibus piceo-testaceis.

Of a fuscous colour, with the pronotum furnished with a broad and distinct white or greenish-white band along its whole upper ridge from near the apex of the dorsal protuberance to the apex of the posterior process; the sides, too, are irrorated with small spots of the same colour; the dorsal protuberance is simple, slightly porrect, rounded at the apex, abruptly and with a very slight sinuation declivous in front, and behind merging with a strong and even sweep into the posterior process, with which it forms a very obtuse and hardly perceptible angle behind the middle; tegmina fusco-hyaline, clearer on the external margin and broadly infuscate at the apex; legs pitchy testaceous.

Long. $9\frac{1}{2}$ millim.; lat. int. hum. $4\frac{3}{4}$ millim.

Hab. MEXICO, Rinconada in Vera Cruz (*Schaus*).

One male specimen.

7. **Telamona satyrus,** sp. n. (Tab. IX. figg. 9, 9 *a*.)

Brunnea, piceo griseoque variegata, capite leviter, pronoto sat fortiter punctato, postice rugoso; humeris ut in specie præcedenti valde prominentibus, auritis; protuberantiâ dorsali simplici, haud truncatâ, apice rotundato, in metopidium sat abrupte declivi, postice ad basin fortiter impresso et sinuatim in processum posticum mergente; tegminibus hyalinis ad apicem et interdum in medio brunneis; pedibus testaceis, tarsis infuscatis.

A rather large species, of a brown colour, variegated with fuscous and griseous; pronotum strongly punctured, with traces of rugose raised lines at the sides; shoulders strongly prominent, auriculate; dorsal protuberance nasute, rounded and slightly deflexed at the apex, with a deep and strong, though small impression on each side at the base; the dorsum, if viewed from the side, extends in a broad sinuation into the posterior process, which is long and nearly reaches the apex of the tegmina; the latter are hyaline, with the apex at least brown or smoky; legs testaceous, with the tarsi infuscate.

Long. $10\frac{1}{2}$–11 millim.; lat. int. hum. 7 millim.

Hab. GUATEMALA, Quiché Mountains 9000 feet, San Gerónimo 3000 feet (*Champion*).

The form of the dorsum will at once separate this species from either of the preceding; if viewed from the side the type specimen bears a strong resemblance to the head of a satyr, with ears, nose, mouth, and long pointed beard.

The specimen from San Gerónimo is figured.

Subfam. *CENTROTINÆ*.

The members of this subfamily may be known by the presence of a distinct and more or less uncovered scutellum. Certain of the genera, as before observed (*anteà*, p. 2), are destitute of the process of the pronotum which is the chief characteristic of the Membracidæ, and the real position of one or two is therefore somewhat uncertain. The Central-American genera may be distinguished as follows:—

I. Pronotum with a longer or shorter posterior process, usually starting from the base, but occasionally from the front.
  1. Posterior process of the pronotum not or scarcely reaching beyond the scutellum, or at most not beyond the middle of the body.
    A. Pronotum without sharp lateral horns, usually simple, but in one or two instances with broad, porrect, auriculate processes.
      a. Posterior process of the pronotum lying close along the scutellum, or at least touching the tegmina, if viewed from the side.
        *a**. Pronotum without raised lobate or circular carinæ, and not produced in front; tegmina, in part at least, clearer hyaline.
          a†. Wings with four apical areas.
            a‡. Tegmina not pubescent; clavus with the veins indistinct . . . . . *Centriculus*, gen. nov.
            b‡. Tegmina pubescent; clavus with two very strong and distinct veins . . . . . *Amblycentrus*, gen. nov.
          b†. Wings with three apical areas; size very small . . . *Brachybelus*, Stål.
        *b**. Pronotum either with raised circular or lobate carinæ on its upper surface, or else bluntly produced in front, very rarely furnished with porrect auriculate processes; tegmina more or less opaque and dull throughout.
          a†. Pronotum elevated and crowned with strong carinæ, which are more or less circular and confluent, or form blunt lobes; tegmina with three discoidal areas . . . *Phaulocentrus*, gen. nov.
          b†. Pronotum with only the ordinary central carinæ, bluntly produced in front; tegmina with two discoidal areas. *Glischrocentrus*, gen. nov.
      b. Posterior process of the pronotum situated at a considerable distance above the scutellum, short, slender, and almost straight . . . . . *Ischnocentrus*, Stål.

B. Pronotum with two moderately long and sharp lateral horns set at right angles to the shoulders . . . . . *Spathocentrus*, gen. nov.

2. Posterior process of the pronotum reaching beyond the middle of the body, and often extended almost to the apex of the tegmina.

A. Pronotum with lateral supra-humeral horns.

a. Posterior process of the pronotum not trifurcate at the apex.

*a**. Form more or less globose-elliptical, convex; posterior process of the pronotum long and stout, arcuate; supra-humeral horns variable, broad and blunt, often reduced to mere blunt curved prominences . . . . . *Sphærocentrus*, gen.nov.

*b**. Form more or less oblong and narrowed to the apex, as a rule much broader in front than behind.

a†. Tegmina with not more than two discoidal areas.

a‡. Outer discoidal area of the tegmina removed by the breadth of a whole area from the anterior margin; five distinct and well-marked areas reaching the apex.

aa. Outer discoidal area truncate and sessile at the base, more or less oblong, and, as a rule, not much smaller than the inner discoidal area, which is also oblong . . . . . *Campylocentrus*, Stål.

bb. Outer discoidal area stylate, subtriangular, considerably smaller than the inner discoidal area, which, if present, is trapezoidal, but is sometimes wanting. *Boocerus*, Stål.

b‡. Outer discoidal area of the tegmina very small, touching or almost touching the outer marginal vein; inner discoidal area circular and depressed; four distinct apical areas only reaching the apex (if a fifth is present it is very minute and evidently abnormal) . . . *Gnamptocentrus*, gen. [nov.

b†. Tegmina with three discoidal areas.

a‡. Posterior process of the pronotum triangular, broad at the base and gradually narrowed to a blunt point just beyond the middle of the body . . . . . *Platycentrus*, Stål.

b‡. Posterior process of the pronotum long, slender, and parallel, reaching almost to the apex of the body . . *Centruchoides*, gen. nov.

b. Posterior process of the pronotum dilated and trifurcate before the apex; supra-humeral horns stout and serrate . . . . *Smerdalea*, gen. nov.

B. Pronotum without lateral supra-humeral horns.

a. Pronotum rounded in front, not produced into a porrect or raised process.

a†. Posterior process of the pronotum simple, not trifurcate.

a‡. Disc of the pronotum with a bluntly raised carina on each side; posterior process sinuate above the scutellum, and then slightly bent upwards in an almost straight point . . . . . *Psilocentrus*, gen. nov.

b‡. Disc of the prothorax even; posterior process strongly bisinuate, with the apex deflexed	*Ophicentrus*, gen. nov.
b†. Posterior process of the pronotum starting from just above the head and divided at the base into three long and slender spines, of which the central one reaches the apex of the tegmina, and the lateral pair, if viewed from above, resemble very slender lateral supra-humeral horns . . .	*Stylocentrus*, Stål.
b. Prothorax produced into a porrect or raised process in front; form more or less compresso-elevate	*Lycoderes*, Germ.
II. Pronotum without posterior process.	
1. Pronotum with lateral horns, which are variable in form, sometimes strong, acute, and curved, and sometimes reduced to blunt prominences	*Tolania*, Stål.
2. Pronotum without lateral horns.	
A. Scutellum raised into a strong prominence behind	*Gerridius*, gen. nov.
B. Scutellum not raised.	
a. Ocelli situated close to the margin of the eyes.	
*a**. Form elongate-oblong; vertex of the head raised and strongly bilobed; tegmina opaque, with the veins indistinct	*Endoiastus*, gen. nov.
*b**. Form obovate; vertex of the head raised, with the raised part sinuate; tegmina hyaline, with the veins thick and strongly raised	*Tropidaspis*, Stål.
b. Ocelli situate at a distance from the eyes.	
*a**. Tegmina not reticulate, with the veins scarcely visible, except at the apex; form obovate; size small	*Gargaropsis*, gen. nov.
*b**. Tegmina more or less strongly reticulate, especially towards the apex, with the veins thick and strongly raised; form oblong; size comparatively large	*Æthalion*, Latr.

PLATYCENTRUS.

Platycentrus, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 48 (1869); Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 291 (1869).

1. **Platycentrus acuticornis.** (Tab. IX. figg. 10, 10 *a–c*.)

Platycentrus acuticornis, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 291 [1].

Hab. Mexico (*Sallé* [1], *Mus. Holm.*[1]), Jalisco (*Schumann*).

The very long, sharp, and strongly divergent horns will easily distinguish this species. The specimen from Jalisco, a female, is somewhat different from a typical example kindly lent me by Dr. Aurivillius; it is shorter and darker, with the base of the tegmina more plainly infuscate, and the pronotal horns straighter and less elevated. Stål, however, in his description of the species, says "cornubus subrectis vel leviter curvatis,"

and speaks of the colour as "fuscus vel fusco-ferrugineus." Our specimen, moreover, is not quite perfect, and, under the circumstances, I do not like to separate it.

The specimen from the Stockholm Museum is figured.

2. **Platycentrus obtusicornis.** (Tab. IX. figg. 11, 11 *a*.)

Platycentrus obtusicornis, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 291 [1].

Hab. Mexico (*Mus. Holm.*[1]), Jalapa (*Höge*).

This species may be readily distinguished from the preceding by the broad and blunt horns, which, if viewed from the front, are strongly deflexed at the apex.

Through the kindness of Dr. Aurivillius, I have been enabled to verify these two insects by comparison with typical specimens in the Stockholm Museum.

The specimen from Jalapa is figured.

BOOCERUS.

Boocerus, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 48 (1869); Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 290 (1869).

1. **Boocerus gilvipes.**

Boocerus gilvipes, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 290 [1].

Hab. Mexico (*Mus. Holm.*[1]; *Mus. Vind. Cæs.*; *Mus. Brit.*).

The pellucid elytra and bright orange legs will easily distinguish this species, which in general appearance and size is allied to *Campylocentrus*; it is not represented in our collection.

CAMPYLOCENTRUS.

Campylocentrus, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 289 (1869).

According to Stål's arrangement this genus appears to be somewhat heterogeneous, containing *Centrotus curvidens*, Fairm., and *C. subspinosus*, Fairm., as well as *C. hamifer*, Fairm. (nec Walk.), and its allies. In general facies, however, and in other respects, the first two species seem abundantly distinct.

1. **Campylocentrus hamifer.**

Centrotus hamifer, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 512 [1] (nec Walk.).
Centrotus niveiplaga, Walk. List of Homopt. Ins., Suppl. p. 160 [2].

Hab. Mexico [1] (*Sallé* [2]), Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*); Guatemala (*Scherzer* [2]), Sabo in Vera Paz, Cerro Zunil (*Champion*); Panama (*Boucard*), Volcan de Chiriqui (*Champion*).

Sent in plenty from Chiriqui. The pronotal process in this species is flatter and

more depressed and level on its upper surface than in the allied forms; it varies slightly in size. The conspicuous white patches on the scutellum are sometimes rubbed off, and some specimens are browner than others. Fairmaire [1] describes the tegmina as "jaunes, transparentes, une tache blanchâtre à la base"; but he apparently had a very light-coloured specimen before him. In the ordinary examples the tegmina are fusco-hyaline, with the costal margin and a more or less distinct patch on the interior margin under the apex of the pronotal process dark, and with a distinct luteous or orange spot at the base.

The *Centrotus hamifer* mentioned by Walker (List of Homopt. Ins., Suppl. p. 159) as from Port Natal must be referred to another species.

2. **Campylocentrus pusillus.**

Centrotus pusillus, Fairm. Ann. Soc. Ent. Fr. sér. 2, iv. p. 512 [1].

Hab. Mexico [1] (*Mus. Brit.*).

Not represented in our collection.

3. **Campylocentrus obscuripennis.** (Tab. IX. figg. 12, 12 *a*, *b*.)

Campylocentrus obscuripennis, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 289 [1].

Hab. Mexico (*Mus. Holm.*[1]), Orizaba (*Mus. Vind. Cæs.*), Jalapa (*M. Trujillo*).

This species has the tegmina entirely fuscous, with a large bright hyaline spot on the interior margin a little before the apex. In the Vienna Museum there is a variety with the centre of the tegmina more or less hyaline and the margins broadly fuscous.

The specimen from the Stockholm Museum is figured.

4. **Campylocentrus gibbicornis.**

Centrotus gibbicorne, Walk. Ins. Saund., Homopt. p. 76 (1858) [1].

Hab. Mexico (*Sallé*).—South America [1].

Closely allied to *C. obscuripennis*, from which it may be distinguished by its larger size, the quite differently-coloured tegmina, and the narrower and more reflexed pronotal horns, as well as by the strong confluent tomentose patch at the base of the scutellum. From *C. hamifer* it may at once be known by the much more arcuate pronotal process.

5. **Campylocentrus vitreipennis,** sp. n.

C. gibbicorni affinis et simillimus, sed latior, cornibus pronoti a fronte visis vix reflexis, tegminibusque, basi extremâ exceptâ, totis pellucidis, vitreis, maculâ fuscâ parvâ ad marginem interiorem, distinguendus.

Very closely allied to *C. gibbicornis*, but rather larger, with the horns of the pronotum less reflexed and almost straight if viewed from the front, and with the tegmina entirely transparent and hyaline, except the extreme base and a small fuscous spot on the internal margin towards the apex; the veins also are finer;

the patches of tomentose pubescence at the base of the scutellum are almost wanting, but they are often rubbed off.

Long. cum tegm. $6\frac{1}{2}$ millim.; lat. int. corn. 4 millim.

Hab. GUATEMALA, Senahu in Vera Paz (*Champion*).

One male specimen.

6. **Campylocentrus brevicornis,** sp. n. (Tab. IX. figg. 13, 13 *a*.)

C. hamifero affinis, sed minor, nigro-cæruleus, et cornibus pronoti, supra visis brevibus, acutis, fere rectis, a fronte visis paullo reflexis, processuque prothoracis supra scutellum magis curvato distinguendus; pronoto fortiter subrugoso punctato, obtuse carinato, processu fere ad apicem abdominis extenso, in medio lobato, supra scutellum leviter curvato; scutello ad basin maculis duabus albo-tomentosis; tegminibus fusco-hyalinis, basi margineque apicali, et interdum exteriori, nigrâ vel fuscâ, maculâque mox ante basin luteâ vel albidâ; pedibus fuscis, tarsis apiceque tibiarum dilutioribus.

Nigro-cæruleous, the pronotum rather strongly and subrugosely punctured, with the process extending to or to a little beyond the apex of the abdomen, curved above the scutellum, and strongly lobed underneath in the middle; anterior horns, if viewed from above, short, sharp, and almost straight, if viewed from the front slightly reflexed; scutellum with two distinct white tomentose patches at the base; tegmina fusco-hyaline, with the base and more or less of the margin fuscous; legs fuscous, with the tarsi and the apex of the tibiæ lighter.

Long. cum tegm. 6 millim.; lat. int. corn. 3 millim.

Hab. GUATEMALA, Sinanja in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui 2000 feet (*Champion*).

Two male specimens. One from the Volcan de Chiriqui is figured.

7. **Campylocentrus brunneus,** sp. n. (Tab. IX. figg. 14, 14 *a*, *b*.)

Robustus, fusco-brunneus, unicolor, sparsim aureo-pubescens; capite pentagonali, oculis prominulis, ocellis inter se ac ab oculis pariter distantibus; pronoto antice subtilius, postice fortius punctato, obtuse carinato, cornibus magnis latis, obtusis, supra haud carinatis, processu postico robusto, fortiter punctato, valde arcuato, pone medium lobo magno tegmina attingente; tegminibus brunneis, opacis, ad apicem obscure brunneo-pellucidis, ad basin punctatis; abdomine nigro, nitido; pedibus fusco-ferrugineis.

A stout, robust species, of a unicolorous fuscous-brown colour, with scanty golden pubescence; pronotum strongly and subrugosely punctured behind, more finely so in front, with a shining raised line; horns large and stout, subauriculate, not carinate above; posterior process very strongly arcuate, almost forming a semicircle, broad, and coarsely punctured, with a reddish raised line on each side, strongly lobed behind the middle, the tip acute, scarcely reaching the apex of the tegmina; scutellum without tomentose pubescence; tegmina unicolorous brown, slightly more transparent at the apex; abdomen black and shining; legs fusco-ferruginous.

Long. cum tegm. 8 millim.; lat. int. corn. $5\frac{1}{2}$ millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One female specimen. This is one of the most distinct species of the genus.

GNAMPTOCENTRUS, gen. nov.

Quoad formam structuramque *Campylocentro* maxime affinis, sed areis tegminum apicalibus minus oblongis, areâ discoidali interiori fere circulari, exteriori minutissimâ ad marginem approximatâ facile distinguendus; processu pronoti elongato, supra fortiter vel leviter sinuato.

Very closely allied to *Campylocentrus*, but with the tegmina quite differently veined, there being five apical areas (two on the external margin, the one nearest the apex being very small, the next two large, and the external one smaller, and rounded at the apex, where it is joined in the centre by the marginal vein), and two discoidal areas, of which the interior is almost circular and the exterior very small. In one of the species below described the posterior process of the pronotum is very strongly sinuate on both its surfaces, in the other the sinuation is only slight, so that it does not form a good character.

It will be noticed that the number of apical and discoidal areas of the tegmina are the same as in *Campylocentrus*, but their shape and distribution are very different, and the tegmina, though more or less pellucid, appear to be more coriaceous, with the veins thicker and coarser.

1. **Gnamptocentrus sinuatus,** sp. n.

Minor, niger vel piceus, antice griseo-pubescens, capite dense punctato, pronoti humeris a fronte visis distincte prominulis, distincte sed haud profunde punctato, cornibus sat latis leviter recurvis, supra carinatis, processu postico ultra apicem abdominis extenso, fortiter sinuato, ad medium lobato, serpentino; scutello ad basin albido tomentoso; tegminibus hyalinis nigro-variegatis, ad basin nigris, deinde maculâ albidâ vel luteâ, interdum indistinctâ vel fere deficiente, instructis; pedibus nigris, tarsis dilutioribus.

Mas minor, apice tegminum cum ceteris concolori.

Femina major, apice tegminum luteo-hyalino.

A small species, black or pitchy in colour, with the pronotum distinctly, subremotely, and not deeply punctured, with rather strong, but not long horns, which are slightly recurved, pointed at the apex, and carinate on their upper surface, and with a long process, which reaches beyond the apex of the abdomen, and is strongly sinuate on both its upper and lower margins, and is lobed in the middle, the lobe being often more or less merged in the sinuation; tegmina hyaline, variegated with black, black at the base, with a luteous or whitish spot a little before the base, which is often indistinct; legs black or pitchy, with the tarsi, and sometimes the apex of the tibiæ, lighter.

♂. Smaller and darker, with the pellucid part of the tegmina clear hyaline.

♀. Larger and more pitchy, the tegmina less clearly hyaline, with the apex especially obscurely luteous.

♂. Long. cum tegm. $4\frac{1}{2}$–6 millim.; lat. int. corn. $3\frac{1}{2}$–4 millim.

♀. Long. cum tegm. $4\frac{1}{2}$–5 millim.; lat. int. corn. $2\frac{3}{4}$–3 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Cubilguitz and San Juan in Vera Paz, El Tumbador, Las Mercedes, Cerro Zunil, Zapote (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

So far as I have been able to judge, the differences above noticed are sexual, but the examples from Teapa (seven in number), and one from Atoyac, have the pronotal process more strongly sinuate, and, where the tomentose pubescence is not rubbed off, have only two minute spots, one on each side of the base of the scutellum. The specimens from the other localities have the pronotal process less strongly sinuate, and the pubescence, where present, forming a confluent patch at the base of the scutellum, which is, however, sometimes very thin in the middle. In one small specimen from Las Mercedes the pubescence is very thick and white, and in this example the pronotal process is very slightly sinuate in the middle. It is possible that I may have included two species under the above description.

2. **Gnamptocentrus cavipennis,** sp. n. (Tab. IX. figg. 15, 15 *a*, *b*.)

Major, niger, capite sat magno, rugoso, dense punctato; pronoto antice fortius haud profunde punctato, metopidio sat acute carinato, cornibus sat longis, cultratis, supra carinatis, processu postico longo ultra apicem abdominis extenso, supra scutellum arcuato, ad medium lobato supra lobum leviter sinuato, apice longo acuto; scutello ad basin albido-tomentoso; tegminibus nigris, apice late medioque luteo-hyalinis, maculâque ante basin luteâ, areis ad medium concavis, venis crassis; pedibus nigris, tarsis fuscis.

Considerably larger than *G. sinuatus*, which it resembles in its general structure; pronotum rather strongly, subremotely, and not deeply punctured, with the horns long, sharp, and reflexed if viewed from the front, broad, cultrate, and carinate if viewed from above; posterior process elongate, lobed beneath at about the middle, arcuate above the scutellum, slightly sinuate above the median lobe; scutellum with a large confluent patch of tomentose pubescence at the base; tegmina black, with the apex broadly and the central portion irregularly luteo-hyaline, and with a luteous patch before the base, the hyaline portion prevailing in some specimens; the central areas are concave, and the veins thick and large; legs black, the tarsi fuscous.

Long. cum tegm. $6\frac{1}{2}$–7 millim.; lat. int. corn. 4–$4\frac{1}{2}$ millim.

Hab. GUATEMALA, Sinanja in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

This insect very closely resembles one or two of the species of *Campylocentrus*, but may at once be known by the venation of the tegmina. Apart from the difference in size, it is very closely related to the preceding, of which it may prove to be a variety.

A specimen from the Volcan de Chiriqui is figured.

SPATHOCENTRUS, gen. nov.

Oblongus, leviter pubescens, capite magno, oculis sat magnis, prominentibus; pronoto pone metopidium brevi, cornu sat magno utrinque armato, his acutis, a fronte visis fere rectis, carinatis, processu postico curvato, ad apicem dilatato, spathato, supra scutellum elevato, usque ad medium corporis producto; tegminibus ultra apicem abdominis vix productis, venis crassis, areis discoidalibus duabus, fere æqualibus; pedibus teretioribus.

Closely allied in shape and size to *Gnamptocentrus*, but easily distinguished by the pronotal process being arcuate above the scutellum, and much dilated and spatulate at the apex, which just touches the middle of the body; the horns are of moderate size, and set at right angles to the side of the pronotum, being almost straight, or scarcely perceptibly deflexed, if viewed in front; the tegmina are opaque, and punctured at the base, with thick pubescent veins, and with two discoidal areas of nearly equal size.

This is a very distinct genus, and is interesting as connecting the forms like *Campylocentrus* &c. on the one hand, with those like *Brachybelus*, *Amblycentrus*, &c. on the other. At first sight it looks like a *Gnamptocentrus* with the posterior part of the pronotal process broken off, but when examined under a high magnifying-power this proves to be not the case.

1. **Spathocentrus intermedius,** sp. n. (Tab. IX. figg. 16, 16 *a*, *b*.)

Ferrugineus, capite pronotoque fortius punctato, hoc carinâ centrali ab apice processus usque ad caput extensâ, processu ipso utrinque carinato, fortiter punctato; tegminibus subhyalinis, venis crassis, rufis, pubescentibus, ad basin late opacis et punctatis; pedibus ferrugineis.

Of a ferruginous colour, with the head, which is large, and the pronotum rather strongly punctured, and the process of the latter carinate and punctured at the sides and on the dilated portion at the apex; scutellum

and base of tegmina closely and distinctly punctured; tegmina subhyaline, with strong veins; legs rufescent.

Long. cum tegm. 5 millim.; lat. int. corn. $2\frac{1}{2}$ millim.

Hab. Mexico (*Mus. Oxon.*).

One female specimen, recently detected by myself in the Oxford Museum. It is possible that the rufescent colour may be due to immaturity, and that the ordinary colour may be much darker.

SPHÆROCENTRUS, gen. nov.

Genus *Campylocentro* affine, sed corpore elliptico, convexo, elongato-subgloboso, cornibusque pronoti multo brevioribus, sæpius fere vel totis deficientibus facile distinguendus.

Allied in several respects to *Campylocentrus*, but easily distinguished by its elliptical, subglobose, and very convex form, and the formation of the pronotal horns, which are, when most pronounced, short and very blunt, and are often almost or entirely wanting, their place being taken by short and obtuse prominences.

Stål (Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 289) includes the species from which the above description is taken in *Campylocentrus*; but, if any weight at all is to be allowed to facies and general appearance, it certainly ought to form the type of a new genus, for hardly any two insects belonging to the same family could look much more different than *Campylocentrus hamifer* and this species. There is not much difference in the venation of the tegmina between the two genera, but *Sphærocentrus* has the tegmina much duller and very minutely reticulate. The posterior process of the pronotum is very stout, and strongly lobed beneath.

1. **Sphærocentrus curvidens.** (Tab. IX. figg. 17, 17 *a*, *b*.)

Centrotus curvidens, Fairm. Ann. Soc. Ent. Fr. sér 2, iv. p. 515[1].
Centrotus subspinosus, Fairm. loc. cit. p. 519[2].

Hab. Mexico[1 2] (*Mus. Holm.*, *Mus. Roy. Belg.*), Cuernavaca and San Marcos (*Bilimek, in Mus. Vind. Cæs.*), Orizaba (*Bilimek, H. H. Smith, and F. D. Godman*), Atoyac in Vera Cruz (*Schumann*), Chilpancingo and La Venta in Guerrero, Teapa in Tabasco (*H. H. Smith*); Guatemala, Coban and San Gerónimo in Vera Paz, El Reposo, Las Mercedes, San Isidro, Pantaleon (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

The larger and more distinctly horned specimens are mostly females, and the smaller and darker specimens in which the horns are rudimentary are mostly males, but this distinction cannot always be relied upon. The colouring of the tegmina is very variable; the light and dark variegation is especially marked in the series from Chilpancingo, which were all taken at a considerable altitude.

There is a single specimen from La Venta, Guerrero, which may belong to a different species, but it is imperfect.

An example from San Isidro is figured.

BRACHYBELUS.

Brachybelus, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 48 (1869); Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 292 (1869).

1. **Brachybelus cruralis.** (Tab. IX. figg. 18, 18 *a*.)

Brachybelus cruralis, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 292[1].

Hab. Mexico, Vera Cruz (*Mus. Holm.*[1]), Amula in Guerrero 6000 feet, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); Guatemala, San Juan and Chiacam in Vera Paz, Cerro Zunil 4000 to 5000 feet (*Champion*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

This species is one of the smallest of the Centrotinæ. It is an obscure dark little insect, with the pronotum clothed with griseous pubescence, and it may be known by the short pronotal process being partly buried in the tegmina, the absence of any pronotal horns, and the regular oblong apical areas of the tegmina.

A specimen from Teapa is figured.

ISCHNOCENTRUS.

Ischnocentrus, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxvi. p. 292 (1869).

This genus may be known by the peculiar posterior pronotal process, this being fine and sharp, sometimes almost straight, but usually very gently curved downwards, though occasionally a little reflexed, and stretching out like a small tail at a considerable distance above the scutellum, beyond the apex of which it is only slightly produced.

1. **Ischnocentrus niger.** (Tab. IX. figg. 19, 19 *a*.)

♂. *Ischnocentrus niger*, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 293[1].

♀. *Ischnocentrus ferruginosus*, Stål, loc. cit.[2]

Hab. Panama, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—Colombia, Bogota [1 2].

I have not seen the types of Stål's species, which appears to have been described from a single male and female; but from his description there can be little doubt as to the genus, and judging by the variation of size and colour in the small series from the Volcan de Chiriqui, I feel certain that they both belong to one species. At first I thought that the smaller specimens, which are unicolorous black, and range from 3–3½ millim. in length, were the males, and the larger ones the females, but one of the smaller ones, at all events, is a female.

OPHICENTRUS, gen. nov.

Oblongus, latior, capite æque longo ac lato, ocellis ad basin sitis inter se quam ab oculis paullo magis remotis; pronoto sat convexo, sine cornibus, humeris prominulis, lineâ centrali elevatâ, processuque longo, fortiter sinuato, serpentino, usque ad apicem abdominis extenso; tegminibus fere totis fuscis ad partem subcoriaceis, venis crassis; corio areis apicalibus quinque, externâ minimâ, discoidalibus duabus, externâ fere circulari et marginem costalem modo non attingenti; clavo venis duabus distinctis; pedibus teretibus.

Oblong, comparatively broad; head with the ocelli situated not far from the base; pronotum convex, without horns or carinæ, except the central line, with the shoulders prominent, and with a long, strongly sinuate, serpentine process, which is strongly elevated above the scutellum, and is not lobed beneath at the centre, where it touches the tegmina; tegmina partly subcoriaceous, with very thick veins; corium with five apical areas, the external being very small and almost merged in the venation, and two discoidals, the external being almost circular and almost touching the costal margin; clavus with two distinct veins on the disc, one being near suture; legs slender.

This is a very distinct genus, and unlike any other known to me; it may at once be known by the peculiar process of the pronotum and the venation of the tegmina.

1. **Ophicentrus notandus,** sp. n. (Tab. IX. figg. 20, 20 *a*.)

♀. Nigro-fusca, capite inæquali, dense punctato, sparsim pubescenti; metopidio supra caput plicato, ferrugineo; pronoto haud nitido, dense et distincte punctato, lineâ centrali elevatâ duabusque ad latera antice convergentibus, humerisque prominulis, ferrugineis, processu postico ferrugineo, apice nigro, supra et ad latera utrinque carinato, sat fortiter punctato; scutello fere æque lato ac longo, apice ferrugineo; tegminibus fusco-hyalinis apice late, maculâ magnâ ante basin, alterâque minori ad marginem interiorem apicem versus, hyalinis, basi ferrugineâ punctatâ; pedibus ferrugineis, partim fuscis.

Fuscous-black, with the metopidium above the head, the central line of the pronotum, two broad bands on either side converging to the metopidium, and the shoulders, which are prominent, ferruginous; pronotum dull, thickly and distinctly punctured, with the posterior process ferruginous and black at the apex, rather strongly and rugosely punctured and carinate on each side, as well as on its upper surface; tegmina in great part fuscous, with a large spot before the base, and another on the interior margin, as well as the apex, hyaline, the base ferruginous, slightly variegated with black; legs ferruginous, in part fuscous.

Long. cum tegm. 4 millim.; lat. int. hum. 2 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

PSILOCENTRUS, gen. nov.

Elongatus, angustus, capite longitudine haud multo latiore, ocellis basin versus positis; pronoto convexo, humeris prominulis, lineâ centrali elevatâ, carinâque elevatâ brevi utrinque ante basin, processu postico elongato, leviter sinuato, subtus inermi, supra scutellum elevato; scutello longo; tegminibus elongatis, fere totis hyalinis, areis apicalibus quinque, discoidalibus duabus; alis areis apicalibus quatuor; pedibus sat longis.

Elongate; head with the ocelli placed not far from the base, and a little further from one another than from the eyes; pronotum convex, with the shoulders prominent, and with two short but rather strongly elevated carinæ on each side of the central line near the base, which are bluntly pointed in the centre, and are most conspicuous if viewed from the front; posterior process long, nearly reaching the apex of the abdomen, gently sinuate, not lobed beneath, raised above the scutellum, which is longer than broad; tegmina elongate, with the extreme base opaque and punctured, and the rest hyaline; corium with five apical and two discoidal areas; clavus with one distinct vein; wings with four apical areas; legs slender.

This genus is allied to *Ischnocentrus*, but may readily be known by the elongate and gently sinuate posterior process and the lateral carinæ of the pronotum.

1. **Psilocentrus xautipæ,** sp. n. (Tab. IX. figg. 21, 21 *a*, *b*.)

Fuscus, pronoto unicolori vel ferrugineo-variegato, colore variabili, capite inæquali, metopidio supra caput plicato et impresso ; pronoto dense et distincte sed haud profunde punctato, sparsim pubescenti, processu postico nigro testaceo-vittato ; scutello subrugosius punctato, apice testaceo, maculâ utrinque ad basin albido-tomentosâ ; tegminibus hyalinis, basi nigrâ punctatâ, deinde maculâ magnâ albidâ, maculisque unâ et alterâ ad margines nigris, venis partim nigris, partim hyalinis ; pedibus cum colore corporis variantibus.

Fuscous, with the pronotum often more or less broadly variegated with ferruginous, thickly and distinctly punctured, with the posterior process black, banded with testaceous ; scutellum fuscous, with the apex light, and with a distinct patch of whitish tomentose pubescence on each side at the base ; tegmina hyaline, with the veins partly black ; the entire base is black and punctured, and this is followed by a white spot ; there is also a black patch on the interior margin just behind the middle, and the costal margin is dark just before the apex ; legs more or less dark, but varying with the colour of the body.

Long. cum tegm. 7–7½ millim. ; lat. int. hum. 2–2½ millim.

Hab. MEXICO, Omilteme 8000 feet and Xautipa, both in Guerrero (*H. H. Smith*).

CENTRICULUS, gen. nov.

Elongatus, haud pubescens, capite longitudine latiori, supra caput plicato, ocellis basin versus sitis, oculis magnis prominulis ; pronoto convexo, ad medium latissimo, sine cornibus, humeris prominulis, processu postico brevissimo, recto, supra scutellum haud elevato, usque ad apicem hujus extenso ; tegminibus longis, lævibus, sat angustis, opacis, ad medium hyalinis, basi late punctatâ, corio areis apicalibus quinque, discoidalibus duabus fere æqualibus oblongis, clavâ venâ unâ in disco distinctâ ; alis areis apicalibus quatuor ; pedibus sat teretibus.

Elongate, with the head rather broader than long, the ocelli situated towards the base, but at some distance from it ; pronotum convex, broadest in the middle, where the shoulders are prominent, without horns ; posterior process very short, straight, lying along the scutellum, the apex of which it just reaches ; tegmina long, opaque, except across the middle, with almost the basal half punctured, with five apical areas and two oblong, almost equal, discoidal areas ; wings with five apical areas ; legs, especially the posterior pair, rather slender, with the intermediate and posterior tibiæ, as is the case in several allied genera, minutely serrulate on their outer margins.

This genus is allied to *Ischnocentrus*, but may be easily distinguished from it by the formation of the pronotal process and the different character of the tegmina ; these latter, at first sight, appear to have three discoidal areas, but in reality there are two only.

1. **Centriculus rufotestaceus,** sp. n. (Tab. IX. figg. 22, 22 *a*.)

Rufo-testaceus vel testaceo-cervinus, capite abdomineque ferrugineis, pectore nigro ; capite distincte sed haud fortiter punctato ; pronoto fortius sat dense punctato, linea lævi dilutiori centrali in processum posticum producto, hoc brevissimo apicem versus sensim dilatato ; scutello latitudine longiori, punctato ; tegminibus testaceis, opacis, parte mediâ hyalinâ, ad basin late fortiusque punctatis ; pedibus testaceis, unguibus nigris.

Rufo-testaceous, with the head and abdomen ferruginous and the breast black ; head distinctly and not strongly punctured ; pronotum rather strongly and thickly punctured, with a smooth light testaceous central line, which is produced behind into a very short process, the latter gradually, though slightly, dilated towards the apex ; tegmina testaceous, opaque, with the central portion hyaline, broadly and strongly punctured towards the base ; wings with fine testaceous veins ; legs testaceous, the claws black.

Long. cum tegm. 6 millim. ; lat. 2 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*); PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

Three female specimens. We figure one from the Volcan de Chiriqui.

AMBLYCENTRUS, gen. nov.

Oblongus, pubescens, capite inæquali, ocellis inter se et ab oculis fere pariter remotis, oculis magnis prominulis; pronoto convexo, supra caput late plicato, sine cornibus, humeris prominulis, a fronte visis subauriculatis, processu postico vix ultra apicem scutelli producto, obtuso, a latere viso sat lato apicem versus sensim dilatato; tegminibus longis, pubescentibus, corio areis apicalibus quinque, discoidalibus duabus, clavo venis duabus magnis, distinctis; alis areis apicalibus quatuor; pedibus teretibus.

Elongate, strongly pubescent, with the head about as long as broad, and the eyes rather large; pronotum convex, rather strongly plicate above the head, without horns, with the shoulders prominent, and bounded on their inner side by a rather deep furrow, which makes them appear somewhat auriculate, if viewed from the front; posterior process reaching a little beyond the apex of the scutellum, not elevated above it, obtuse, if viewed from the side rather broad and gradually dilated behind; tegmina long, pubescent, with five apical areas and two discoidal, the clavus with two large raised veins on the disc; wings with four apical areas; legs slender.

This genus is rather closely allied to *Centriculus*, but the general facies is very different, and the longer head, subauriculate shoulders, and the very different tegmina, together with the two strongly raised veins on the clavus, seem sufficient to distinguish it.

1. **Amblycentrus pubescens,** sp. n. (Tab. IX. figg. 23, 23 *a*, *b*.)

Fusco-niger, capite pube longâ densâque griseâ instructo, pronoto fortiter punctato minus dense pubescenti, lineâ lævi ferrugineâ in processum posticum extenso, hoc brevi a latere viso haud tenui apicem versus sensim dilatato, testaceo, apice nigro; tegminibus ad basin nigris, punctatis, deinde nigro- testaceo-hyalino-variegatis, venis partim nigris, partim testaceis, his pube longâ circumcinctis; pedibus nigris, tibiis rufo-ferrugineo annulatis.

Of a fuscous-black colour, with the head clothed with thick and long greyish pubescence; pronotum strongly and closely, and at the sides subrugosely, punctured, with a smooth central line extending behind into the posterior process, which is short, testaceous, and black towards the apex; tegmina black and punctured at the base and thence variegated with black, obscure testaceous, and hyaline, the apex hyaline, the veins large, partly black and partly testaceous, surrounded by long pubescence; wings with the veins black; legs black, with the apex of the femora and tibiæ, the tarsi, except the claws, and more or less distinct rings on the tibiæ, rufo-ferruginous.

Long. cum tegm. $5\frac{1}{2}$ millim.; lat. int. hum. 2 millim.

Hab. MEXICO (*Mus. Oxon.*: ♀), Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*: ♂).

This insect is quite distinct from any that I have yet seen. The specimen from Xucumanatlan is figured.

Since writing the above description, I have received an insect from Omilteme, Guerrero (8000 feet), which may belong to this species; it is rather smaller, with the pronotal process narrower at the apex, and the apical areas rather straighter. Both this and the type specimen are males.

PHAULOCENTRUS, gen. nov.

Oblongus, haud nitidus, dense subtiliter pubescens, capite lato, ocellis inter se et ab oculis fere æque remotis, his valde prominentibus; pronoto metopidio fortiter declivi, elevato, fortiter circulariter carinato, vel perobtuse lobato, interdum cornuto; processu postico tenui, brevi, pronoto ad basin hujus utrinque emarginato, angulis lateralibus emarginationis productis plerumque acutis; scutello sat parvo, triangulari, emarginato; tegminibus opacis longis, leviter ensatis, areis apicalibus quinque vel sex, discoidalibus tribus; alis areis apicalibus quatuor, secundâ haud stylatâ; pedibus sat robustis.

Oblong, subparallel, thickly and finely pubescent; forehead broad, eyes very strongly prominent, subpetiolate, ocelli about the same distance from one another as from the eyes; metopidium declivous; pronotum without horns, but elevated and crowned with strong carinæ, which are more or less confluent and form blunt lobes, shoulders very bluntly prominent; base of the pronotum emarginate on each side of the short posterior process, lateral angles acute; scutellum small, triangular, emarginate; tegmina opaque, slightly ensiform, with five or six apical areas and three discoidal areas, the external areas declivous; wings with four apical areas, the second not stylate; legs rather stout, with the anterior and intermediate tibiæ slightly dilated.

The insects forming this genus are allied to *Tolania*, to the hornless specimens of which they bear a superficial resemblance; they differ, however, apart from other characters, in the presence of a pronotal process, which is wanting in *Tolania*.

Uroxiphus caryæ, Fitch*, of which there are specimens in the Oxford Museum (apparently presented by Fitch himself), as well as in the British Museum, belongs to this genus. The name *Uroxiphus* cannot be used in the present case, as it has previously been employed by Amyot and Serville (1843) for a different genus of the same family.

1. **Phaulocentrus pileatus**, sp. n. (Tab. X. figg. 1, 1 *a*.)

Griseo-testaceus, disco pronoti fuscato, opacus, capite ad basin bituberculato, pronoto distincte sed haud profunde punctato, a latere viso elevato, pileato, supra viso carinâ forte circulari coronato, carinâ longitudinali divisâ, hoc ad apicem metopidii continuato, processu postico testaceo, basi fuscâ, brevi, fortiter supra scutellum elevatum rotundato, scutello triangulari, apice emarginato; tegminibus opacis subtiliter pubescentibus, venis testaceis, corio ad apicem clavi maculâ obscurâ fuscâ notato; pedibus abdomineque testaceis.

Of a greyish-testaceous colour, dull, finely pubescent, with the disc of the pronotum infuscate, and the base of the tegmina obscurely lighter; head with two distinct tubercles at the base; pronotum distinctly, but not deeply, punctured, if viewed from the side strongly elevated and flat on the disc, if viewed from above crowned with a strong almost circular carina, the space enclosed by which is divided by a longitudinal carina continued on to the metopidium; from the base of the pronotum proceeds a strongly arcuate short process, which is testaceous behind and infuscate at the base, its apex lying between the emarginate apices of the scutellum, the latter elongate triangular, and raised considerably towards the base; tegmina dull, pubescent, with brownish-testaceous veins, and with a fuscous spot behind the apex of the clavus; legs and abdomen testaceous.

Long. cum tegm. 7 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo 3000 feet (*Champion*).

Three female specimens.

* Third Report on the Noxious, Beneficial, and other Insects of the State of New York, p. 132 (1856).

2. **Phaulocentrus proximus,** sp. n. (Tab. X. figg. 2, 2 *a*.)

P. pileato maxime affinis, sed tuberculis capitis minoribus, emarginationibus ad basin processus pronoti minus latis, angulis lateralibus magis productis, et præcipue scutello ad basin vix elevato, processuque pronoti haud arcuato, fere recto, longiori, distinguendus.

Very closely allied to *P. pileatus*, and at first sight inseparable from it; the general colour, however, is more uniform, the tubercles at the base of the head are smaller, the formation of the disc of the pronotum is somewhat different, the space included by the carinæ being wider behind and more narrowed in front; the posterior pronotal process is longer and almost straight, and not arcuate above the scutellum as in that species, its extreme apex being dark, and the tegmina are obscurely lighter at the base.

Long. cum tegm. 7 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

One female example. There is also in our collection a specimen with the abdomen wanting, which is closely related to this species; it is, however, smaller and much darker and more variegated, and has the raised disc of the pronotum somewhat differently formed. When more specimens are obtained, it may possibly be found to be the male of one of the species here described, but I believe it will prove to be distinct.

3. **Phaulocentrus sordidus,** sp. n. (Tab. X. figg. 3, 3 *a*.)

P. proximo affinis, sed colore magis brunneo, tuberculis capitis vix distinctis, pronoto supra excavato et utrinque in lobum perobtusum elevato, margine anteriore excavationis rectâ, marginibus lateralibus leviter postice convergentibus, carina centrali in metopidio continuato, processu postico fere recto, apice fusco, emarginatione ad basin utrinque latâ rectilineari; tegminibus ad basin testaceo fuscoque variegatis, pubescentibus, venis rufo-testaceis; corpore subtus pedibusque testaceis, his obscure variegatis.

Allied to *P. proximus*, but rather narrower and more darkly coloured, with the tubercles at the base of the head very small, and the disc of the pronotum differently sculptured, the lateral carinæ being raised on each side into a blunt lobe, and being slightly convergent behind; the posterior process is almost straight and the emarginations on each side of it are broader and squarer than in *P. proximus*; the tegmina have a testaceous patch at the base, bordered broadly on each side with fuscous, the colour being more or less obscure, and the apex of the clavus is testaceous, followed by a small fuscous patch on the corium, the veins rufo-testaceous; legs and abdomen testaceous, the former very obscurely variegated.

Long. cum tegm. 7 millim.; lat. int. hum. $2\frac{1}{3}$ millim.

Hab. MEXICO, Soledad in Guerrero 5500 feet (*H. H. Smith*).

In the single example of this species received, a female, the tegmina have six apical areas, but the first external area is small and perhaps abnormal, the regular number for the genus being evidently five.

4. **Phaulocentrus cornutus,** sp. n. (Tab. X. figg. 4, 4 *a*.)

P. proximo quoad staturam et colorem maxime affinis, sed pronoto antice duobus magnis latis cornibus instructis, auriculatis, ad apicem late rotundatis, introrsum carinatis, processu postico testaceo, apice nigro, leviter recurvato.

Of about the same size and colour as *P. proximus*, but easily distinguished by the pronotum being furnished with two large porrect auriculate horns, which are broadly rounded at the apex, and are carinate on their inner side; the pronotal process is testaceous, black at the apex, and if viewed from the side is curved, and widened at the apex.

Long. $7\frac{1}{2}$, cum cornibus 9 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. MEXICO (*Mus. Oxon.*).

GLISCHROCENTRUS, gen. nov.

Gen. *Phaulocentro* maxime affine, sed oculis minus prominentibus, haud subpetiolatis, pronoto simplici obtuse supra metopidium producto, areisque tegminum discoidalibus duabus, facile distinguendus.

Very closely allied to *Phaulocentrus*, but distinguished by having the forehead more even, the frontal tubercles very small, the eyes less prominent, and the pronotum without the ordinary central carina, and obtusely produced above the metopidium; the tegmina, moreover, have only two discoidal areas; the latter character, however, is somewhat difficult to distinguish in these genera.

A single species from the State of Panama is referred to it.

1. **Glischrocentrus cucullatus,** sp. n. (Tab. X. figg. 5, 5 *a*.)

Opacus, testaceus, unicolor, subtiliter flavo-pubescens; capite æquali, subtilissime punctato; pronoto dense punctato, a latere viso sensim antice a basi elevato, perobtuse cucullatim producto, carina centrali utrinque leviter impresso, supra viso ad humeros latissimo, deinde versus apicem basinque sensim et æqualiter angustato; processu postico modico, fere recto, emarginatione utrinque angustâ apice rotundato; scutello plano; tegminibus cum pronoto concoloribus; abdomine pedibusque testaceis, tibiis ad partem perobscure infuscatis.

Testaceous, dull, finely pubescent; head even, very finely punctured; pronotum, if viewed from above, quadrilateral, with the sides equal, broadest at the shoulders, produced behind into a straight process, on each side of which the base is narrowly and roundly emarginate; if viewed from the side gradually raised from the base to the front, where it is very obliquely produced above the metopidium; scutellum level; tegmina concolorous with the pronotum; abdomen and legs testaceous, the tibiæ in parts very obscurely darker.

Long. cum tegm. 5 millim.; lat. int. hum. 2 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).

One female example.

CENTRUCHOIDES, gen. nov.

Oblongus, capite inter oculos lato, oculis fortiter prominentibus, ocellis inter se quam a basi horum minus remotis; metopidio supra caput leviter plicato; pronoto humeris obtuse prominulis, cornibus supra hos magnis, latis, oblongis, truncatis, latere superiori sæpe apicem versus exciso; basi pronoti utrinque ad basin processus postici profunde circulariter emarginatâ, hoc longo, angusto, subparallelo, apice acuto, fere ad apicem abdominis extenso; tegminibus totis opacis, corio areis apicalibus quinque, discoidalibus tribus, clavo venis duabus in disco distinctis; alis areis apicalibus quatuor, discoidali nullâ; pedibus teretibus; abdomine supra et subtus cereo.

Oblong, with the head broad between the eyes, which are very strongly prominent and almost entirely exposed if viewed from above; ocelli nearer each other than to the eyes; pronotum with the shoulders obliquely prominent, above which are two very large and broad, though not long, horns, which are truncate at the apex and carinate above, and often notched on their upperside, thus presenting a short sharp point at about the middle—they are, however, somewhat variable in size, direction, and shape; base of the pronotum strongly excavated on each side of the posterior process, which is long, subparallel, and acute, and reaches almost to the apex of the abdomen; scutellum about as broad as long, strongly emarginate at the apex; tegmina opaque, corium with five apical areas, which are more or less oblong and subequal, and three discoidal areas, radial vein straight and uninterrupted, ulnar vein bifurcate near the base and again at about the middle near the transverse vein of the third discoidal area; wings with four apical and no discoidal areas; abdomen cereous.

This genus in facies appears to be closely allied to *Centruchus* and *Oxyrhachis*, both of which are peculiar to the Old World. Apart from other differences, it may be

known from the former by the extra discoidal area of the tegmina and the very prominent eyes, and from the latter by the extra discoidal area of the wings and the shape of the pronotal process.

1. **Centruchoides laticornis,** sp. n. (Tab. X. figg. 6, 6 *a*.)

Fuscus vel fusco-brunneus, pronoto sparsim breviter pubescenti, subrugoso, lineâ centrali elevatâ, remotius punctato, punctis magnis haud profundis; scutelli apice utrinque plerumque dilutiori; tegminibus opacis, maculis quibusdam parvis flavo-albescentibus interdum instructis; abdomine cereo vel cereo-tomentoso; pedibus ferrugineis, plus minusve infuscatis.

Of a fuscous or fuscous-brown colour, but variable, the lighter specimens having the head, the front of the pronotum, and the base of the tegmina more or less testaceous, the darker specimens being almost unicolorous; pronotum with a very distinct central line, rugose at the sides, set with large and not very closely placed punctures; scutellum usually lighter at its apical points; tegmina brown, with the veins unicolorous, nearly always with a small dirty-whitish spot of pubescence just in the middle, and sometimes with others towards the apex; these appear, however, to be very fugitive; abdomen covered with a whitish or yellowish waxy-looking substance, the front parts pubescent; legs ferruginous, more or less infuscate.

Long. cum tegm. 7–9 millim.; lat. int. corn. 4–5 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

The variation in the form of the horns of this species is probably not a sexual character, as at first I thought might be the case: in one small specimen they are notched in such a way as to be quite curved and pointed at the apex. The waxy secretion on the abdomen appears to have as its foundation a whitish tomentose pubescence.

In facies this species strongly resembles *Centruchus fuscipennis*, Stål (=*Centrotus fuscipennis*, Germ.), a South-African species.

SMERDALEA, gen. nov.

Robusta, scabra, fronte latâ, angustâ, inæquali, ad latera bilobatâ, antennarum setis e lobis procedentibus, ocellis inter se quam ab oculis minus distantibus, oculis valde prominulis; humeris a fronte visis breviter sed acute prominulis; pronoto pube recumbenti vestito, aspero, cornibus duobus anticis permagnis, latis, serratulis, mucronibus quibusdam majoribus instructis, ante basin in processum magnum extenso; basi pronoti truncatâ; processu elongato ad basin dilatato deinde tenuiori, et ad apicem iterum expanso, fortiter trispinoso; scutello prælongo, triangulari, ad basin elevato, et protuberantiâ latâ posticâ, apicem dilatatum processus pronoti attingenti, instructo; tegminibus amplis, intectis, corio areis apicalibus quinque, discoidali unâ, suturâ clavati perdistinctâ; alis areis apicalibus quatuor, secundâ haud stylatâ; pedibus teretibus, tibiis posticis extus utrinque minute serratulis.

A stout and rugged-looking species, the general form, if viewed from directly above, being that of an elongate reversed isosceles triangle; head produced in front, forehead broad and narrow, with the ocelli distinct, situated nearer to one another than to the eyes; above the ocelli are two or three small depressed shining callosities, which in some lights resemble extra ocelli; eyes very strongly prominent, almost petiolate; pronotum with the shoulders slightly but sharply prominent, with two very large and broad antlered horns in front, which are rough and serrate; behind these and just before the base of the pronotum, which is distinct and truncate, there is a long posterior process, which is considerably elevated above the scutellum, dilated at the base, then narrowed, and strongly dilated and trispinose behind in the form of a reversed bird's-foot, the hinder spine being the longest; scutellum long, triangular, pointed at the apex, raised at

the base, then strongly sinuate, and again elevated at the apex into a strong broad protuberance, on which the dilated apex of the pronotal process rests; tegmina extending for some distance beyond the apex of the pronotal process, uncovered, slightly sinuate on the interior margin at the apex of the clavus, and from thence obliquely rounded to the apex, which is obtusely angled; clavus with two strong veins proceeding from the base and a transverse vein in the middle; corium with the radial and ulnar veins straight until about the middle and then curved, with five apical areas, one discoidal; wings with four apical areas, the second not stylate; legs slender, posterior tibiæ with the outer side serratulate on the margins.

The species on which this genus is described is one of the most extraordinary members of the Membracidæ that has yet been discovered. At first sight it looks like a very large *Cyphonia*, but, as will be seen from the description, its affinities are evidently towards the Centrotinæ, and it is very closely allied to *Bocydium*, near which it must be located.

1. **Smerdalea horrescens,** sp. n. (Tab. X. figg. 7, 7 *a*, *b*.)

Brunnea, testaceo fuscoque variegata; pronoto scabro, flavo-pubescenti, fortiter remote et irregulariter punctato, metopidio cornibusque tuberculatis, ad basin cornuum calloso, lævi, testaceo; processu pronoti in medio testaceo, spinis posticis testaceo annulatis, apice sæpius fusco; tegminibus ut pronoto variegatis, parte dimidiâ basali pubescenti, suturâ clavi late hyalinâ exceptâ, opacâ, parte apicali hyalinâ; apice late fusco-brunneâ, venis crassis, hyalinis, pubescentibus; pedibus dilute testaceis, fusco annulatis.

Of a warm brown colour, variegated with fuscous and testaceous; pronotum irregularly and more or less remotely punctured and more or less tuberculate, especially in front and on the broad frontal horns; on each side of the base of the latter there is an uneven, smooth, testaceous callosity; posterior process of the pronotum testaceous in the middle, apical spines ringed with testaceous, the central spine being always more or less fuscous at the apex; tegmina variegated like the pronotum, but somewhat darker, with the basal half and the thick veins variegated and pubescent, and a broad patch at the apex and the portion of the corium meeting the apex of the clavus fuscous-brown, the dark colour being uninterrupted along the internal margin of the corium; legs light testaceous, the tibiæ ringed with fuscous.

Long. cum tegm. 11 millim.; lat. int. corn. 7 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

This species is evidently both local and very scarce. Four females.

A specimen from Bugaba is figured.

STYLOCENTRUS.

Stylocentrus, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 49 (1869).

This genus was formed by Stål for the reception of *Bocydium ancora*, Perty, which is found in Cayenne, and is, apparently, a very scarce species. It may be known by the very long and slender trispinose process which proceeds from the front of the pronotum (the intermediate spine almost reaching to the apex of the tegmina), and by the double tubercles on this part. The insect described below is not so large or handsome as *B. ancora*, but it is one of the most remarkable of the Central-American Homoptera: Mr. Champion informs me that it is very scarce, and that he very rarely found it, and then only a single specimen at a time.

1. **Stylocentrus championi,** sp. n. (Tab. X. figg. 8, 8 *a*.)

Niger, capite, metopidio et lateribus pectoris squamis albis maculato, et lineâ utrinque pronoti albo-squamosâ; oculis valde prominulis; pronoto haud nitido, remotius punctato, lineâ centrali elevatâ, processu trispinoso gracillimo, spinâ intermediâ fere ad apicem tegminum producto; scutello brevi, apice acuto; tegminibus pellucidis venis nigris, quibusdam latis; abdomine rufo, apice fusco; pedibus nigris, tarsis tibiarumque apicibus flavis.

Black, dull, with the head and front parts of the pronotum furnished with more or less distinct patches of white scales, which are present in two broad lines on each side of the pronotum, these lines almost meeting beneath the base of the trispinal process, where they are separated by a narrow line; the sides of the chest also, which is dark, are furnished with large patches of similar white scales; the trispinose process is very long and slender; the pronotum is distinctly but somewhat remotely punctured, as is also the scutellum, which is very short and terminates in a short sharp point; the tegmina are transparent, with dark veins, some of which are broad and thick; the clavus and external part of the corium are rather strongly punctured, especially towards the base, and the claval margin is somewhat thickened, with the dark colour tapering to the apex, so that the scutellum appears to be elongate until the tegmina are divided; abdomen red, with the apex fuscous; legs black, with the tarsi and the apex of the tibiæ yellow.
Long. 6 millim.; lat. inter spinas exteriores processus pronoti 4 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

LYCODERES.

Lycoderes, Germar, Rev. Ent. Silb. iii. p. 259 (1835); Stål, Kongl. Vet.-Ak. Handl. Band viii. 1, p. 52 (1869).

The two species below described evidently belong to *Lycoderes*, Germ., but they differ from the normal members of the genus in having the scutellum concealed. Some of the species, of which there are a considerable number (mostly from Brazil), are among the most extraordinary of the Membracidæ. The genus *Stegaspis* is closely allied to *Lycoderes*, but the pronotum is more foliaceous in front and is never lobed at the apex.

Stål (*l. c.* p. 53) has divided *Lycoderes* into several subgenera on the formation of the pronotum and the areas of the tegmina.

1. **Lycoderes phasianus,** sp. n. (Tab. X. figg. 9, 9 *a*.)

Elongatus, brunneo-ferrugineus, unicolor, supra visus angustatus maxime compressus, a latere visus ampliatus, ab apice tegminum usque ad basin cornus pronoti leviter et æqualiter rotundato, hoc porrecto, haud longo, parallelo, apice bilobato; pronoto acute carinato, fortiter et rugose, sed varie, punctato, apice postico obtuso apicem clavi vix superante; scutello obtecto; tegminibus cum pronoto concoloribus, opacis, ad basin fortiter punctatis; abdomine pedibusque testaceis.

Much compressed, of a unicolorous ferruginous-brown colour, very narrow if viewed from above, if viewed from the side broad and evenly rounded from the apex of the tegmina to the base of the pronotal horn; the latter is comparatively short, porrect and elevated, rugose at the sides, and bilobed at the apex; the pronotum is strongly punctured, but more closely at the shoulders than on the sides, on which are present several rugose raised lines; the apex just reaches the apex of the clavus; scutellum concealed; tegmina dark, opaque, punctured strongly at the base; abdomen and legs clear yellow-testaceous.
Long. cum tegm. 9 millim.; lat. int. hum. $1\frac{3}{4}$–2 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species appears in some points to be allied to *L. luctans*, Stål, but, to judge from the description, it is evidently quite distinct on account of the formation of the pronotum above the scutellum.

2. **Lycoderes serraticornis,** sp. n. (Tab. X. figg. 10, 10 *a*.)

Griseo-testaceus, capite sat magno, oculis prominulis; pronoto sat fortiter, sed haud profunde punctato, antice in cornu magnum, porrectum, parallelum, utrinque plus minusve distincte unicarinatum, lateribus sparsim serratulis, apice bilobato, productum, processu postico angusto longo fere recto apicem clavi vix tangente; scutello obtecto; tegminibus pone processum posticum oblique ad apicem truncatis, hyalinis, venis testaceo-brunneis, vix parte tertiâ opacâ fortiter punctatâ; pedibus abdomineque testaceis vel plus minusve nigricantibus.

Broader in proportion than the preceding, of a griseous-testaceous colour, with the centre of the head and sometimes the hinder parts of the dorsum obscurely fuscous; pronotum produced in front into a long and stout, porrect, and very slightly deflexed horn, which is distinctly though sparingly serrate at the sides and bilobed at the apex; the sculpture of the horn and for the most part of the pronotum is rugose, but not deep; the posterior process is long and almost straight and reaches just to the apex of the clavus, from which point the tegmina are obliquely truncate to their extreme apical angle, which is obtusely rounded in a broad angle; the tegmina are hyaline-brown, opaque and punctured at the base, with the veins testaceous-brown, and the apex irrorated with ferruginous dots; legs and abdomen testaceous, often more or less infuscate; the bodies of several specimens are more or less sprinkled with a white secretion.
Long. cum tegm. 9 millim.; lat. int. hum. 2 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Several specimens. In our collection there is a broken specimen of another species, also from Bugaba, which is apparently closely allied to the one just described, with the tegmina more punctured and the posterior process of the pronotum differently shaped; the anterior horn, however, is broken off.

GERRIDIUS, gen. nov.

Elongatus, subparallelus, capite magno ante frontem late triangulariter producto, ocellis inter se quam ab oculis evidenter magis distantibus; pronoto simplici postice latissimo, humeris vix prominulis, antice sensim angustato, basi levissime rotundatâ, processu postico prorsus deficienti; scutello magno, triangulari, postice protuberantiâ magnâ latâ erectâ instructo, margine hujus anticâ sinuatim declivi, posticâ rectâ; tegminibus nitidis, lævibus, areis apicalibus quinque, discoidalibus duabus, plerumque oblongis, haud deflexis; alis areis apicalibus quatuor, secundâ oblongâ haud stylatâ; pedibus posticis elongatis, tibiis prælongis leviter curvatis.

Oblong, subparallel; head large, triangularly produced in front; ocelli situated on a line drawn through the centre of the eyes, evidently more distant from each other than from the eyes; pronotum simple, without horns or prominences, broadest a little before the base, which is very gently rounded, very gradually declivous, with the broad posterior margin of the front of the head covering the apex of the metopidium; scutellum very large, triangular, furnished with a large upright protuberance behind, which in front is declivous and has its hinder margin straight at right angles to the dorsum; tegmina tectiform behind the scutellum, very smooth and shining, with five apical and two discoidal areas, which are for the most part oblong and have the veins running parallel to the margins; wings with four apical areas, the second being oblong and not stylate; posterior legs elongate, with the tarsi very long, recurved.

This genus appears to be closely related to *Lamproptera* in certain points, but differs

in having the head and pronotum simple, without horns, and in the formation of the external apical areas of the tegmina, which are not deflexed.

1. **Gerridius scutellatus,** sp. n. (Tab. X. figg. 11, 11 *a*, *b*.)

Nigro-piceus, capite pronotoque vix nitidis perdense et subtilissime granulatis, illo margine postico flavo-testaceo, hoc basi extremâ angustissime testaceo limbatâ, lineâ lævi centrali vix distinctâ; scutello nigro, protuberantiâ piceâ postice albo-limbatâ; tegminibus vitreo-hyalinis, basi extremâ, et apice clavi coriique, nigris; pedibus fusco-testaceis.

Pitchy-black, with the head and pronotum not or scarcely shining, very thickly and finely sculptured, hind border of the forehead comparatively broadly, and hind margin of the pronotum very narrowly, testaceous, central line not very distinct; scutellum black, extremely finely punctured, with the protuberance, if viewed from the side, in part pitchy and rather broadly bordered behind with white; tegmina very shining, hyaline, with the extreme base, the apex of the clavus and of the corium, a spot at the centre of the former, and the internal margin before the apex, pitchy-black; legs fusco-testaceous; abdomen mostly infuscate.

Long. $4\frac{3}{4}$ millim.; lat. int. hum. 2 millim.

Hab. PANAMA, San Lorenzo (*Champion*).

One male specimen.

TOLANIA.

Tolania, Stål, Öfv. Kongl. Vet.-Ak. Förh. xxiv. p. 248 (1858); Bidr. till Rio Janeiro-Traktens, Hemipter.-Fauna, p. 36.

This is one of the transitional genera of the Membracidæ, in which the pronotum has no posterior process; it is, however, in all other respects a true Centrotid, and the species were assigned to the genus *Centrotus*, until Stål characterized the genus.

1. **Tolania opponens.** (Tab. X. figg. 12, 12 *a*, ♀; 13, 13 *a*, var., ♀.)

Centrotus opponens, Walk. List of Homopt. Ins., Suppl. p. 159[1].

Hab. MEXICO (*Sallé*[1]); GUATEMALA, Sinanja, Chiacam, and Cubilguitz in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui 2000 to 4000 feet, David (*Champion*).

There is a series of about forty specimens of this species in our collection; they vary very much in size and in the development of the pronotal horns, which are occasionally wanting or only partially developed. The difference in the form of the horn is not a sexual character. We figure a typical specimen from Sinanja and a variety from the Volcan de Chiriqui, both females.

2. **Tolania obtusa,** sp. n. (Tab. X. figg. 14, 14 *a*.)

Præcedenti simillima sed scutello breviori, apice late rotundato, postice densius et fortius punctato, tegminibusque areis apicalibus plerumque angustioribus distinguenda.

This species may easily be distinguished from *T. opponens* by the shape of the scutellum, which is much less elongate, broadly rounded, and more punctured behind; the areas of the tegmina are somewhat variable

in the genus, but in the present species the apical areas are for the most part narrower; the examples in our collection vary with regard to the presence or absence of pronotal horns.

Long. 7 millim.; lat. int. hum. 3 millim.

Hab. GUATEMALA, Sinanja and Cubilguitz in Vera Paz (*Champion*); PANAMA, Bugaba, Tolé, San Miguel in the Pearl Islands (*Champion*).

Although this insect appears to be distinct from *T. opponens*, yet I have separated it with great hesitation, owing to the extreme variability of the specimens of the genus which I have hitherto seen. The character, however, of the scutellum, which is a prominent feature in the genus, seems to be constant.

GARGAROPSIS, gen. nov.

Brevis, oblonga sat lata, capite longitudine paullo latiore, ocellis indistinctis, inter se quam ab oculis remotioribus; pronoto lato, mox ante basin obtuse angulato latissimo, humeris rotundatis, sine cornibus vel processu postico, basi supra scutellum truncatâ, vix sinuatâ; scutello magno, equilatero-triangulari, apice producto acuto, mox post medium lineâ semicirculari impresso; tegminibus totis intectis, hyalinis, vitreis, nitidis, remote fortiter punctatis, nervis corii indistinctis, ad medium evanescentibus, corio areis apicalibus quatuor, discoidalibus nullis vel vix indicatis, alis areis apicalibus tribus; pedibus posticis longis, robustis, tibiis externe utrinque distincte serratulis, setosis; pedibus anticis et intermediis brevioribus fere simplicibus.

Oblong and rather broad, gently narrowed behind; ocelli indistinct, situated on a line drawn just between the centre of the eyes, to which they are closer than to one another; pronotum in front of about the breadth of the head, gradually widened towards the base, obliquely angled a little before the base and there broadest, the shoulders rounded; horns and posterior process entirely absent; scutellum large, with its three sides about equal, acute at the apex; tegmina entirely uncovered, large, vitreous, with coarse remote punctuation, which is stronger on the clavus, corium with the radial and ulnar veins marked but indistinct, and with four apical areas, clavus large with the veins more distinct; wings with three apical areas, and with the reflexed portion (answering to clavus) very large and furnished with two large thick veins, which cut one another in the centre; posterior legs long and stout, tibiæ rather strongly serratulate on their outer margins, anterior and intermediate pairs rather short and simple.

This is one of the puzzling genera which appear to be rightly placed at the end of the Centrotinæ, and which, on the other hand, scarcely appear to be true Membracidæ. The present genus is very distinct from any other described, and does not appear to have any striking affinities. Very little, however, is known as yet about these transitional genera, as they appear to have been found very rarely, and one or two specimens at a time; they can therefore be only located provisionally at present. The position of the ocelli and the simple vertex of the head, as well as the formation of the tegmina, separate *Gargaropsis* very widely from *Tropidaspis* and *Endoiastus*. In general facies it resembles a broad species of *Gargara*, though the resemblance is, of course, entirely superficial.

1. **Gargaropsis innervis**, sp. n. (Tab. X. fig. 15.)

Oblongo-obovata, capite testaceo, subtiliter granuloso, oculis prominulis; pronoto scutelloque obscure testaceis nigro irroratis, illo maculis duabus supra caput, lineâque centrali testaceis, haud punctatis, subtiliter transversim striatis; tegminibus vitreo-hyalinis ad apicem extremum fumosis, punctis nigris; abdomine

fusco, apicibus segmentorum flavescentibus; pedibus posticis, parte exteriore exceptâ, nigris, ceteris fusco-testaceis.

Rather broad, gradually narrowed behind, with the head finely granulose, testaceous, with minute black spots and two lighter testaceous small patches at the base; pronotum and scutellum obscurely testaceous, irrorated with black, the pronotum with obscure warm brown markings at the sides, metopidium with two testaceous patches in front; semicircular depression before the apex of the scutellum (which is black) very distinct; tegmina vitreous, smoky at the apex and on the extreme margins, with the punctures dark; posterior legs mostly black, anterior pairs fusco-testaceous; abdomen black, with the apex of the segments testaceous.

Long. cum tegm. 6 millim.; lat. int. tegm. 3 millim.

Hab. Mexico, Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*).

One male specimen. The male organs, to judge by their external appearance, may present good characters, but would require dissection. In examining the specimen, the pronotum became detached, leaving a smooth space exposed underneath, at the base of which are markings, which under a compound microscope appear in some lights as if they might be a stridulating-organ.

ENDOIASTUS, gen. nov.

Oblongus, parvus, subparallelus, capite magno, producto, ad basin depressione latâ in duo lobos divisâ, antennis sub oculis positis, ocellis fere ad marginen centralem oculorum sitis, his approximatis; pronoto irregulariter hexagonali, postice latissimo, humeris vix prominulis, distincte carinato, antice supra caput late plicato, sine cornibus vel processu postico, a latere viso convexo rotundato, antice abrupte postice levius declivi; scutello fere æque longo ac lato, postice depresso carinato; tegminibus intectis, totis opacis, punctatis, corio venis indistinctis, areis apicalibus quatuor, discoidali nullâ; alis areis apicalibus quatuor; pedibus modicis.

Oblong, narrowed in front and parallel behind, with the head large and produced, and bilobed at the base, above which the metopidium is strongly plicate; ocelli placed close to the eyes at about their central margin; pronotum irregularly hexagonal, with the angles more or less rounded, strongly convex if viewed from the side, with a very distinct central keel, but without horns or posterior process; shoulders very bluntly prominent if viewed from the front, rounded if viewed from above, the base almost straight before the scutellum, which is about as long as broad, pointed at the apex and plainly carinate; tegmina opaque and punctured, corium with four apical areas and no discoidal; wings with four apical areas; tarsi rather short.

The formation of the basal portion of the head and the position of the ocelli appear to place this peculiar little Membracid near *Tropidaspis* and one or two allied genera; it is quite possible, however, that future writers may assign it a different position.

1. **Endoiastus caviceps,** sp. n. (Tab. X. figg. 16, 16 *a*.)

Subparallelus, haud nitidus, fusco-ferrugineus, dense subtiliterque punctatus, breviter sparsim aureo-pubescens; oculis vix prominulis; pronoto antice posticeque fusco; scutello fusco, carinâ postice testaceâ; tegminibus opacis fusco-testaceoque obscure variegatis; corpore subtus pedibusque fuscis vel fusco-ferrugineis.

A small oblong and subparallel species, dull, very closely and finely sculptured and scantily clothed with very short golden pubescence, which appears to be easily rubbed off; pronotum ferruginous, with a patch at the base and the anterior part dark or entirely fuscous, with two obscure ferruginous vittæ converging towards the front; scutellum fuscous, with the apex of the carina testaceous; tegmina opaque, unicolorous

brown or obscurely variegated with fuscous and indistinct testaceous patches, or with broad testaceous veins at the apex, which are not the true veins, though they follow their course; legs fuscous.

Long. $3\frac{1}{2}$–4 millim.; lat. int. hum. $1\frac{3}{4}$–2 millim.

Hab. GUATEMALA, Panzos and Cubilguitz in Vera Paz (*Champion*); NICARAGUA (*Janson*).

The specimen figured is from Panzos.

TROPIDASPIS.

Tropidaspis, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 56 (1869).

I have not seen the type of this genus [which was formed by Stål for the reception of *Centrotus carinatus*, Fabr. (Syst. Rhyngot. p. 21)], and Dr. Aurivillius informs me that it is not represented in the Stockholm Museum. Stål's description, however, is very full, and the insect described below agrees exactly with it, except that he lays stress upon the fact that the corium has no discoidal areas, whereas the Panama example has two small ones on one side and one on the other. This very fact shows that the venation in this example is abnormal; and as in other respects I shall have to copy Stål's description almost word for word, I have not much doubt in referring our insect to this genus. The chief characters appear to be the close approximation of the ocelli to the eyes, the raised base of the head, the absence of the pronotal process, and the long scutellum, which is strongly carinate behind.

1. **Tropidaspis affinis**, sp. n. (Tab. X. figg. 17, 17 *a*.)

Oblongo-obovata, fusco-ferruginea; capite nigro, subtiliter punctato, lineâ centrali angustâ, albidâ; pronoto transverso, ad basin latissimo, antice fortiter angustato, ante scutellum distincte sinuato, dense sat fortiter punctato, ferrugineo, obscure fusco-variegato; scutello fusco, longo, supra tegmina elevato, antice convexo, toto carinato, ante apicem late testaceo-vittato; tegminibus intectis, amplis, ad basin opacis punctatis, hyalinis, venis crassis, brunneis; pedibus testaceis, leviter infuscatis.

Short and rather broad, oblong-obovate, of a fuscous-ferruginous colour; head black, finely punctured, with a longitudinal smooth testaceous line; pronotum transverse, broadest about the base, basal margin about twice as broad as the apical margin, rather strongly sinuate before the scutellum, ferruginous, obscurely variegated with fuscous in front, and with the apical part of the produced lobe near the eyes testaceous; scutellum fuscous, large and long, convex in front and acutely keeled throughout, with a testaceous band before the apex; tegmina entirely exposed, hyaline, with the veins thick and strongly marked, brown, the middle ones variegated with testaceous; underside and legs testaceous, more or less fuscous.

Long. cum tegm. 4 millim.; lat. int. hum. $2\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

One female specimen. It is possible that this may be a variety of *T. carinata*.

Subfam. *ÆTHALIONINÆ.*

The position of this subfamily, which is here regarded as containing the genus *Æthalion* only, has given rise to much difference of opinion among authors, and has been very differently located *. Germar (Mag. der Ent. iv. p. 94) places *Æthalion* between *Eupelix* and *Cicada*; Amyot and Serville (Hist. Nat. Ins. Hémipt. p. 556) place it under the Cicadellina of Burmeister, among the group Eurymelides, and Walker (List of Homopt. Ins. iii. p. 646) follows the same arrangement; Stål (Kongl. Sv. Vet.-Ak. Handl. Band viii. 1, p. 49) includes it under his Centrotida, which, however, he regards as merely a subfamily of his Jassida; while Ashmead (Ent. Americana, v. p. 125) makes *Æthalion* and *Eurymela* the types of separate subfamilies (Æthalioninæ and Eurymelinæ) of the Bythoscopidæ.

Æthalion has evidently strong affinities towards *Tolania*, but differs from it in too great a degree to admit of being classed in the same subfamily with the latter genus, an arrangement adopted by Goding (Trans. Am. Ent. Soc. xix. p. 253), and, if it must be definitely located, it is, perhaps, most correctly placed near or among the Centrotinæ. At the same time it differs from the rest of the Membracidæ, and if included under that family it becomes almost impossible to give a definition that will comprise all its members, for it neither has a pronotal process nor a perpendicularly declivous metopidium; nor does it altogether agree with the Jassidæ, and still less with the Bythoscopidæ, under both of which it has been located. In fact, *Æthalion* is plainly a transitional genus and as such must be regarded; as, however, its affinities seem, if anything, to lean towards the Membracidæ, it is perhaps the best plan to provisionally include it under that family, though there appears to be no reason why it should not be placed under a separate family. In all zoological classification there seems too great a tendency on the one hand to force transitional genera under fixed families, and on the other to limit too closely the formation of new families and groups. In nearly all cases the family or group at its extreme end must be subject to exceptions, and must be more or less elastic. Stål is much blamed in certain quarters for too often using the words "plerumque," "sæpissime," "rarissime," &c. to qualify his definitions; perhaps this is true to a certain extent, but it is difficult to see how he could have done otherwise in the case of the Homoptera, in the present state of our knowledge, and considering the very small available material that has hitherto been got together by collectors.

ÆTHALION.

Ætalion, Latreille, Consid. génér. sur les Crust., Arachn. et Ins. p. 263 (1810).
Æthalia, Germar, Mag. der Ent. iv. p. 94 (1821).

---

* For this reason it was omitted from the key to the subfamilies of Membracidæ, *anteà*, p. 3.

Æthalion, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 556 (1851); Signoret, Ann. Soc. Ent. Fr. sér. 2, ix. p. 670; Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 296.

This genus contains upwards of twenty species, all from Tropical South America; some of these, however, are very closely related and are apparently synonymous. They are of oblong form, with prominent eyes, which project plainly beyond the sides of the metopidium, and with a convex and transversely hexagonal pronotum, which is rounded at the base; the elytra are more or less strongly reticulate, with the veins strong and raised; and the legs are usually banded with black or fuscous.

1. **Æthalion reticulatum.** (Tab. X. figg. 18, 18 *a*.)

Cicada reticulata, Linn. Syst. Nat. 12th ed. i. 2, p. 707 (1767) [1].
Tettigonia reticulata, Fabr. Syst. Rhyng. p. 41 [2].
Lystra reticulata, Fabr. loc. cit. p. 60 [3].
Æthalia reticulata, Germ. Mag. der Ent. iv. p. 95 [4].
Æthalion reticulatum, Am. et Serv. Hist. Nat. Ins. Hémipt. p. 557 [5]; Walk. List of Homopt. Ins. iii. p. 646 [6].
Tettigonia minuta, Fabr. Ent. Syst. iv. p. 26 [7].
Æthalion bivittatum, Walk. List of Homopt. Ins. iii. p. 649 [8].
Æthalion parallelum, Sign. Ann. Soc. Ent. Fr. sér. 2, ix. p. 677 (1857) [9].
La Cigale du citronnier, Stoll, Cig. p. 59, t. 14. fig. 74 [10].

Hab. Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*); Central America (*Mus. Vind. Cæs.*).—South America [2]; Colombia [6 8]; Venezuela [8], Caracas [4]; Guiana, Surinam [3 4 10]; Amazons [9], Pará; Brazil [4 5 6].

A specimen from the Volcan de Chiriqui is figured.

Var. **vitticolle.** (Tab. X. figg. 19, 19 *a*.)

Æthalion vitticollis, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 297 [11].

Hab. Panama, Bugaba (*Champion*).—Colombia, Bogota [11]; Venezuela.

The specimens of this variety in the Vienna Museum collection are smaller and lighter, and more strongly marked with black bands; intermediate examples occur between the type and the variety, with the stripes partly obsolete or two in number instead of four on the pronotum as in the type. A specimen from Bugaba is figured.

Var. **albo-nervosum.**

Æthalion albo-nervosum, Blanch. in d'Orbigny's Voyage dans l'Amér. mérid. vi. 2, p. 221, t. 31. fig. 6 [12]; Sign. Ann. Soc. Ent. Fr. sér. 2, ix. p. 675 [13].
Æthalion simile, Sign. loc. cit. p. 674 [14].
Æthalion vicinum, Sign. loc. cit. p. 674 [15].

Hab. Panama (*Boucard*), Volcan de Chiriqui 2000 to 3000 feet (*Champion*).—Colombia [15], Bogota [13]; Bolivia [12]; Brazil [14].

Numerous examples. This insect is, no doubt, nothing but a small variety of *Æ. reticulatum*, with the apex of the elytra, as a rule, somewhat more strongly reticulate.

2. **Æthalion nervoso-punctatum.** (Tab. X. figg. 20, 20 *a*.)

Æthalion nervoso-punctatum, Sign. Ann. Soc. Ent. Fr. sér. 2, ix. p. 679, t. 14. figg. 10, 10 *a* [1].

Hab. Mexico [1] (*Sallé; Mus. Oxon.*), Ciudad in Durango 8100 feet (*Forrer*).

This is a very distinct, dull brownish species, which may at once be known by the dark spots on the testaceous veins of the tegmina, the head and pronotum being similarly spotted.

Var. **minor**, var. n. (Tab. X. fig. 21.)

Formæ typicali affinis, sed multo minor, colore griseo-testaceo, margine posteriori capitis magis sinuato, venis tegminum minus distincte fusco-maculatis, basique horum minus late opacâ.

Allied rather closely to the type-form, but of a more griseous colour, with the posterior margin of the head more sinuate in the middle, the pronotum a little shorter in proportion and more declivous, and the veins of the tegmina less distinctly marked with fuscous (this, however, is a variable character); the base of the tegmina is less broadly opaque and punctured.

Long. cum tegm. 7 millim.; lat. int. hum. 3 millim. (Long. form. typ. $8\frac{1}{2}$–9 millim.; lat. 4 millim.)

Hab. Mexico, Omilteme 8000 feet, and Xucumanatlan 7000 feet, both in Guerrero (*H. H. Smith*).

It is possible this may hereafter be regarded as a separate species, but I believe that it is only a local variety.

3. **Æthalion quadratum**, sp. n. (Tab. X. figg. 22, 22 *a*.)

Oblongum, griseo-testaceum, capite angustiori; margine posteriori leviter sinuato, pronoto scutelloque immaculatis, illo distincte, hoc subtiliter punctato; tegminibus venis crassis brunneis, sine maculis, areis apicem versus plerumque quadratis; pedibus obscure testaceis ad partem leviter indistincte infuscatis.

Oblong, subparallel, of a griseo-testaceous colour, with the head narrow, slightly but plainly sinuate on its posterior margin; pronotum and scutellum without spots, the former distinctly and moderately strongly, and the latter very finely, punctured; tegmina punctured at the base, with the veins very distinct and raised, and the apical areas more regular and quadrate than in the allied species; legs dark testaceous, in part obscurely infuscate.

Long. cum tegm. $6\frac{1}{2}$–7 millim.; lat. int. hum. 3 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

This seems to be a very distinct species, although it is allied to the var. *minor* of *Æ. nervoso-punctatum*; in both these insects the pronotum is more declivous in front than appears to be usual with members of the group, and thus causes them to approach nearer to the true Membracidæ. The specimens described are females.

4. Æthalion gratum.

Æthalion gratum, Walk. List of Homopt. Ins., Suppl. p. 169 (1858) [1].
Æthalion dilatatum, Stål, Stett. ent. Zeit. xxv. p. 73 (1864) [2].

Hab. Mexico (*Sallé* [1]; *Mus. Holm.* [2]; *Mus. Oxon.*); Guatemala, San Juan in Vera Paz, Cerro Zunil 4000 to 5000 feet, Capetillo (*Champion*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

One example only from each of the four localities quoted. I had determined the above synonymy from an examination of one of Stål's types and of Walker's species, of which there is a single example in the British Museum; but I find since that Stål himself has noticed it (Öfv. Kongl. Vet.-Ak. Förh. 1869, p. 299).

ADDENDUM.

Among a few insects received after the completion of the MSS. of the Membracidæ was one which seemed at first to belong to the later Centrotinæ, as it resembled one or two of these in general appearance; the very short posterior tarsi, however, and the venation of the tegmina, at once showed that it belonged to the Hoplophorinæ. I include it under *Ochropepla* (*anteà*, p. 43), although in some points it differs from that genus; it has the fourth apical wing-cell only just indicated.

5. Ochropepla fuscata, sp. n. (Tab. X. fig. 23.)

Oblonga, sat lata, fusco-grisea, capite nigro, flavo maculato, oculis sat magnis, prominentibus; pronoto fere rhomboideo, antice, a latere viso, elevato et late rotundato, vix supra metopidium producto, ad humeros prominulos latissimo, deinde rectilineariter ad apicem sat acutum angustato, dorso carinato, pone humeros evidenter depresso, fusco-griseo, maculis quibusdam indistinctis griseis, humeris flavescentibus; tegminibus apicem pronoti dimidio superantibus, hyalinis, venis crassis, brunneis, ad basin opacis, punctatis, maculâ albidâ et deinde maculâ nigricanti mox ante basin fuscam instructâ; pedibus testaceis, tibiis paullo dilatatis.

Oblong, of a dark fusco-griseous colour, with indistinct greyish or greyish-yellow markings; pronotum viewed from above kite-shaped, if viewed from the side elevated and rounded in front and depressed behind, strongly punctured and carinate, the apex forming an angle of about 60°; tegmina much longer than the pronotum, hyaline, with thick veins, opaque and dark at the base, with a whitish spot before the base; legs testaceous.

Long. cum tegm. 6 millim.; lat. int. hum. 2 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One male specimen.

Fam. CERCOPIDÆ *.

Ranatræ, Germar, Mag. Ent. iv. p. 34 (1821) (pars).
Cercopides, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 558 (1843).
Cercopida, Stål, Hem. Afr. iv. p. 54 (1865).

The generally recognized characters of this family are as follows:—Front convex, or produced and compressed on either side; ocelli two, situated on the vertex and near its base; pronotum large, hexagonal or trapezoidal, with a notch on its posterior margin; tegmina nearly always coriaceous; scutellum small or medium-sized, triangular; legs remote from the sides of the body, with the coxæ, especially the posterior pair, short, and the tibiæ cylindrical, the hind pair being furnished with two (rarely one) strong spines on the outer side and a ring of spinules round the apex; the two basal joints of the tarsi denticulate at the apex.

The family may be roughly subdivided as follows:—

Anterior margin of the pronotum straight; eyes as long as broad	Cercopinæ.
Anterior margin of the pronotum rounded and produced between the eyes, which are nearly always more or less transverse †.	Ptyelinæ.

Subfam. *CERCOPINÆ*.

Subf. *Cercopida*, Stål, Hem. Afr. iv. p. 55.

The limits of this subfamily are very doubtful. The genus *Cercopis*, as understood by Fabricius, has almost a world-wide range, as pointed out by Distant (Trans. Ent. Soc. Lond. 1878, p. 173). In 1843 *Cercopis* was subdivided into six genera by Amyot and Serville, who restricted the genus *Tomaspis* to species from South and Central America. In 1866 Stål sunk three of Amyot and Serville's genera, *Triecphora*, *Monecphora*, and *Sphenorhina*, and placed them all under *Tomaspis*, thus extending the range of the latter genus to the Old as well as the New World. Distant (*l. c.* p. 178) agrees with Stål in suppressing *Triecphora* and *Monecphora*, but prefers to retain *Sphenorhina*, on the ground that it seems so well-marked a genus, and one so easily recognized, that it is at least convenient to retain it. The sole distinction, however, of *Sphenorhina*, as given by Amyot and Serville, is that it has the front laterally compressed, "avec une forte carène en forme de coin plus ou moins aigu et dilaté" (Hémiptères, p. 562); whereas in *Monecphora* it is not compressed and has only a feeble carina, and in *Triecphora* it is furnished with three raised lines or carinæ, which, according to Amyot

* The Cercopidæ are placed after the Membracidæ for convenience' sake, and not from any desire to indicate that this is necessarily their proper position; the classification of the Homoptera is as yet quite unsettled.

† There are one or two (probably more) intermediate forms which appear to render any division of the family more or less unsatisfactory, but, as a rule, the facies of the two groups is unmistakable.

and Serville themselves, are by no means always visible. At best, the character given for *Sphenorhina* is a weak one, generically, and besides this, on examining a large number of species, I have found that it is often more or less feebly marked, and that intermediate examples occur, which make it practically impossible to draw a hard-and-fast line between Amyot and Serville's genera: the facies of the various species, as well as their size, differs very considerably, some being elongate and parallel, and others short and ovate; the shape, however, is by no means associated with the carination and compression of the front, for the species most similar in appearance differ in this point *. Under all the circumstances, then, it seems best to include all our species, at all events provisionally, under *Tomaspis*.

TOMASPIS.

Tomaspis, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 560 (1843).
Triecphora, Amyot et Serville, loc. cit. p. 561.
Monecphora, Amyot et Serville, loc. cit. p. 562.
Sphenorhina, Amyot et Serville, loc. cit. p. 562.

This genus, as here constituted, includes a large number of species, both from the Old and the New World. Amyot and Serville restricted *Tomaspis* to insects from South and Central America; but, for the reasons already given, I prefer to follow Stål in again extending it. The genus differs from *Cercopis* in having the ocelli usually very close together, and always nearer to one another than to the eyes, whereas in *Cercopis* they are equidistant from one another and from the eyes, or are closer to the eyes than to each other.

The species described or enumerated below may be divided into four sections as follows; but they are merely provisional, and it must be allowed that certain of the species are intermediate:—

1. Larger species, 17–19 millim. in length, ovate or broad-oblong in shape; with the tegmina, as a rule, coloured in transverse bands, but sometimes spotted or unicolorous.
2. Intermediate-sized species, 14–16 millim. in length, subparallel in shape; with the tegmina coloured in transverse bands.
3. Smaller species, 5–12½ millim. in length, ovate or oblong-ovate, rarely oblong in shape; with the tegmina, as a rule, coloured in transverse bands, rarely spotted or unicolorous.
4. Moderate-sized species, 7–12 or 13 millim. in length, elongate-oblong or parallel in shape; with the tegmina coloured in more or less distinct longitudinal bands or markings, very rarely spotted †.

In the Cercopinæ the apical portion of the tegmina is nearly always more or less

* A glance at Tab. XI., where the metopidium of each species is separately figured, will at once make these points clear.

† The only exception I know is the variety of *T. imperans* described below, in which the red marginal longitudinal band is broken into spots.

distinctly rugosely reticulated: in Group 1 this character is very strongly marked; in Group 2 it is very slight; in Group 3 it varies, being sometimes strong and sometimes nearly absent; in Group 4 it is not strong, though usually distinctly traceable.

The length is given from the front of the head to the apex of the tegmina folded; the length of the body, as given by some authors, is very deceptive, as the segments of the abdomen shrivel and run up very considerably in dried specimens.

Group 1.

This group includes several fine and handsome species, the commonest apparently being the red-banded *Tomaspis inca*, which seems to be plentiful in Mexico, but to be found rarely in the adjacent countries.

1. **Tomaspis inca.** (Tab. XI. figg. 1, 1*a*; 2, 2*a*, var.)

Cercopis inca, Guér. Icon. Règne Anim., Ins. p. 368 [1].
Monecphora inca, Walk. List of Homopt. Ins. iii. p. 675 [2].
Tomaspis inca, Stål, Stett. ent. Zeit. xxv. p. 63 (1864) [3].

Hab. Mexico [1 2 3] (*Bilimek and coll. Signoret, in Mus. Vind. Cæs.*), Palmarito (*Forrer*), Chilpancingo, Mescala, Rincon, Amula, and Soledad, all in Guerrero (*H. H. Smith*), Mexico city (*Höge*), Jalisco and Atoyac (*Schumann*), Rinconada (*Schaus*), San Lorenzo near Cordova (*M. Trujillo*); Guatemala, San Juan in Vera Paz (*Champion*), Escuintla (*Mus. Vind. Cæs.*).

In this species the sides of the pronotum are usually narrowly, but sometimes very broadly, red, and striking varieties occasionally occur. In the Vienna Museum there is a variety with the tegmina, except at the apex and base, unicolorous crimson-scarlet, and also three examples which are almost entirely black, with only faint indications of the usual red bands on the tegmina. A specimen from Mescala, Guerrero, and a variety from Mexico, in the Vienna Museum collection, are figured.

2. **Tomaspis semimaculata,** sp. n. (Tab. XI. figg. 3, 3*a*.)

Subovata, fronte (carinâ centrali metopidii sat fortiter producti lateribusque ante oculos subrufis vel rufis exceptis), pronoto scutelloque viridi-æneis, illo marginibus ab humeris rufis, distincte rugosius punctato, hoc fortiter transversim rugoso; tegminibus nigro-æneis, marginibus apicem versus læte rufis, tertia parte basali irregulariter flavo-testaceâ, pone hanc maculis sextis flavo-testaceis, duabus ad medium, et quatuor ante partem apicalem fortiter reticulato-rugosam lineatim dispositis; corpore subtus cum pedibus cæruleo-ænescenti, marginibus abdominis, coxis, genibus et parte apicali tibiarum rufescentibus.

A large, subovate species, with the front parts greenish-æneous, shining; metopidium compressed and produced, with a reddish carina; pronotum at its widest part rather broader than long, rugosely punctured, the anterior margin red; tegmina dull, very closely sculptured, with the apical third reticulate-rugose, the basal third somewhat irregularly flavo-testaceous; immediately behind this there are two yellow spots, one on each tegmina, almost confluent with the basal colour, and at some distance behind these there are four distinct spots, two on each tegmen, in a row, the two side ones touching the margins,

which from this point are clear red; underside and legs bluish-æneous, with the margins of the abdomen, coxæ, knees, apex of the tibiæ, and underside of the tarsi red or reddish.

Long. 19 millim.; lat. max. 9 millim.

Hab. COSTA RICA (*Van Patten*).

3. **Tomaspis insignita,** sp. n. (Tab. XI. figg. 4, 4 *a*.)

Præcedenti similis, sed paullo minor et magis ovata, colore notarum læte miniato, distinctiori; fronte, pronoto et corpore subtus ut in *T. semimaculatâ*, tegminibus nigro-cupreis, marginibus læte rufis, tribus maculis utrinque marginem attingentibus, disco a basi usque ad partem apicalem reticulato-rugosam maculis quibusdam longitudinaliter obliquis ornato.

A little smaller than the preceding, and somewhat more ovate, with the tegmina dark cupreous, very finely sculptured, with the margins, three spots on each side touching the margins, and irregular oblique markings towards the base and on the disc bright scarlet; metopidium compressed and produced; pronotum at its widest part about as long as broad; legs dark, with the coxæ, apex of the tibiæ, and claws scarlet.

Long. 17 millim.; lat. max. 8 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

There is a fair series of this handsome species in our collection, all from one locality.

4. **Tomaspis quatuordecim-notata,** sp. n. (Tab. XI. figg. 5, 5 *a*.)

Lata, subovata, fronte, pronoto et corpore subtus ut in præcedenti; tegminibus nigro-cupreis, marginibus ad apicem reticulato-rugosam rufis, et quatuordecim maculis distinctis rufo-flavis, quatuor ad basin, sex irregulariter dispositis ad medium, et quatuor ante partem apicalem lineatim dispositis, ornatis.

Rather broad, subovate; metopidium compressed and produced; pronotum at its widest rather broader than long; tegmina dark cupreous, very closely sculptured, dull, with fourteen very distinct orange spots—two on each tegmen at the base, three in a reversed triangle about the middle, and two in a line before the apex, the side-spots just touching the margins; legs dark, with the coxæ, knees, apex of the tibiæ, and more or less of the tarsi, rufescent.

Long. 18 millim.; lat. max. 9 millim.

Hab. NICARAGUA, Chontales (*Janson*).

5. **Tomaspis quadriguttata.**

Sphenorhina quadriguttata, Walk. List of Homopt. Ins. iii. p. 689[1].

Hab. HONDURAS (*Dyson*[1], *in Mus. Brit.*).—AMAZONS, Pará (*Mus. Brit.*).

This species is smaller than the preceding, but appears to be allied to it. It is not represented in our collection.

6. **Tomaspis stygia,** sp. n. (Tab. XI. figg. 6, 6 *a*.)

Lata, sat parallela, fronte (carinâ metopidii acute producti lateribusque ante oculos rufis exceptis), pronoto, scutello et abdomine nigro-cæruleis, tegminibus nigro-æneis immaculatis; abdomine pedibusque cæruleis, illo maculis quibusdam ad latera rufis, his ad partem rufescentibus.

A large, subparallel species; metopidium compressed and produced almost in a hook; pronotum at its broadest about as broad as long; tegmina unicolorous nigro-æneous, with the apical part strongly reticulate-rugose; legs and abdomen cæruleous, the former partly reddish, the latter with reddish spots at the sides.
Long. 19 millim.; lat. max. 9 millim.

Hab. Costa Rica (*Van Patten*).

Group 2.

This group might perhaps be included under the preceding; the species referred to it, however, are smaller, and *T. mylabroides* and *T. præminiata* are very distinct in general appearance.

7. **Tomaspis intermedia,** sp. n.

Sat lata, nigra, nitida, metopidio vix producto, basi pronoti, humeris fasciisque duabus angustis sat obscure luteis; pronoto lævigato, leviter remotius punctato; tegminibus sat parallelis, antice fortius, postice perdensius punctatis ad apicem leviter rugoso-reticulatis; corpore subtus pedibusque piceis.

Rather broad, black, with the metopidium (which is scarcely produced), the base of the pronotum, shoulders, and two straight and rather narrow bands (one at and one behind the middle) obscurely luteous; pronotum shining, broader than long, somewhat remotely and shallowly punctured; tegmina rather strongly punctured and shining in front, thickly punctured and duller behind, very slightly rugose at the apex; underside and legs pitchy.
Long. 14 millim.; lat. 8 millim.

Hab. Panama, Bugaba (*Champion*).

A somewhat unsatisfactory and intermediate species, with an affinity towards *T. inca*, and yet resembling certain members of Group 3. It would be classed as a *Monecphora*, but the metopidium is slightly produced, though not compressed.

8. **Tomaspis mylabroides,** sp. n. (Tab. XI. figg. 7, 7 *a*.)

Elongata, parallela, capite antice flavo, postice cum lateribus ante oculos antennarumque basi nigris; pronoto nitido, longitudine latiori, leviter punctato, nigro, tertiâ parte anteriori flavâ; scutello flavo, postice nigro; tegminibus nigris, parte humerali late, et fasciâ sat latâ ad medium, flavis, dense et distincte punctatis; corpore subtus antice rufo-flavo, abdomine nigro; pedibus nigris vel piceis, femoribus totis vel ad partem rufo-flavis.

A moderately elongate, parallel species, with the head black at the sides and at the base, and yellow in front; metopidium slightly compressed and produced; pronotum smooth and shining, the apical third in front yellow, the rest black, the division being usually abruptly marked, the punctuation somewhat remote and shallow; scutellum yellow, except at the apex; tegmina black, with the front part and a broad fascia at the middle yellow, very closely punctured, especially behind, the apex very slightly reticulate; underside reddish-yellow in front; abdomen black; legs black or pitchy, the femora entirely or almost entirely reddish-yellow.
Long. $15\frac{1}{2}$ millim.; lat. 8 millim.

Hab. Nicaragua, Chontales (*Janson*); Panama, Caldera (*Champion*).

The specimen from Nicaragua has the anterior portion of the pronotum black in the middle. An example from Caldera is figured.

9. **Tomaspis præminiata,** sp. n. (Tab. XI. figg. 8, 8 *a*.)

Quoad formam sculpturamque præcedenti similis, sed capite pronotoque totis, scutello (apice excepto), parte humerali, fasciaque mediali tegminum, pectore femoribusque læte miniatis.

Very like the preceding, but with the whole head and pronotum, as well as the scutellum (except the extreme point), humeral portion, and central fascia of the tegmina, and the underside of the body, except the abdomen, bright scarlet; the femora, with the exception of the apex of the anterior and posterior pairs, are also scarlet.

Long. 15½ millim.; lat. 8 millim.

Hab. Panama, Bugaba (*Champion*).

This may eventually turn out to be a form of *T. mylabroides*.

Group 3.

This group includes a large number of moderate or small-sized species, mostly of ovate shape; the colour varies somewhat, but is usually in transverse bands. So far as I have seen, the bulk of the American species of Cercopinæ belong to this group, some of them being very abundant.

10. **Tomaspis limbata,** sp. n. (Tab. XI. figg. 9, 9 *a*.)

Ovata, parum nitida, nigra, metopidio producto; pronoto latitudine sesquilongiori, sat fortiter rugoso-punctato, marginibus (antico excepto) miniatis; scutello nigro; tegminibus perdense sculpturatis, marginibus omnibus anguste miniatis; corpore subtus pedibusque piceis, metasterno interdum rufescenti.

A moderate and somewhat variably-sized insect, black, with the posterior and lateral margins of the pronotum and all the margins of the tegmina, except occasionally near the scutellum, narrowly scarlet; sculpture of the pronotum rather strong, very close, that of the tegmina very dense and fine, the apex of the latter very slightly reticulate; underside and legs pitchy, the metasternum reddish.

Long. 12½ millim.; lat. 6 millim.

Hab. Mexico (*Signoret, in Mus. Vind. Cæs.; Mus. Brit.*); Guatemala, Purula in Vera Paz (*Champion*).

One of Signoret's specimens is larger and has the posterior border of the pronotum more broadly scarlet, while a second has only the basal margin of the pronotum scarlet. The name "*limbata*" is a MS. name of Signoret's attached to the last-mentioned specimen. An example from Purula is figured.

11. **Tomaspis discontinua,** sp. n. (Tab. XI. figg. 10, 10 *a*.)

Oblongo-ovata, parum nitida, nigra, metopidio producto; pronoto basi lateribusque late flavescentibus, latitudine sesquilongiori, dense rugoso-punctato; scutello nigro flavo-marginato; tegminibus nigris, limbo sat lato ab humeris ad medium vel usque ad tertiam partem apicalem vix rugosam extenso; corpore subtus antice nigro, metasterno abdomineque flavescentibus; pedibus piceis.

Variat colore rufo vel rufo-flavescenti.

Oblong-ovate, dull, very closely sculptured, black, with the posterior and lateral margins of the pronotum, the margins of the scutellum, and a rather broad border at the margin of the tegmina yellow or red; the tegminal border ceases at the middle, or reaches further towards the apex, but always ceases at some

distance from the apex; the colour of the pronotum is somewhat variable, the coloured margins being broader or narrower; metasternum and abdomen yellow or red; legs pitchy.

Long. 9½ millim.; lat. 5 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

A fair series.

12. **Tomaspis bifascia.**

Monecphora bifascia, Walk. List of Homopt. Ins. iii. p. 679 (1851)[1].
Monecphora angusta, Walk. loc. cit. p. 680[2].
Monecphora inferens, Walk. loc. cit., Suppl. p. 176 (1858)[3].

Hab. NORTH AMERICA, Georgia[2].—MEXICO (*Sallé*[3]; *Bilimek and Sichel, in Mus. Vind. Cæs.*), Ciudad in Durango 8100 feet (*Forrer*), Amula in Guerrero, Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, Cerro Zunil (*Champion*); COSTA RICA (*Van Patten*).—ANTILLES, Cuba and Jamaica (*Signoret, in Mus. Vind. Cæs.*).

I believe that the above synonymy is correct. In the typical *T. bifascia* the transverse bands on the pronotum and tegmina are broader than in *T. angusta*, and in *T. inferens* the bands on the tegmina tend to break up and disappear, and occasionally only a reddish band on the pronotum is left; in all the varieties, however, the longitudinal band across the middle of the pronotum is distinct. In one specimen from Ciudad in Durango the hinder tegminal band is distinct, and the front one is absent.

No locality is given by Walker[1] for his *M. bifascia*.

There are several examples in our collection which I have doubtfully referred to this species, which is evidently variable; they are more ovate than the usual form of *T. bifascia* (which is, as a rule, oblong, although short-ovate specimens occur), and have the bands on the tegmina whitish and more obscure; the characteristic line, however, across the middle of the pronotum is always present. It is possible that one specimen from El Reposo, Guatemala (*Champion*), may prove distinct; but it can hardly be described unless more are discovered, and, at best, it would be a doubtful species.

13. **Tomaspis vilior,** sp. n. (Tab. XI. figg. 11, 11 *a*.)

Ovalis, picea, unicolor, capite pronotoque leviter metallicis, illo metopidio haud producto, hoc sat nitido, longitudine sesquilongiori, rugose sculpturato; scutello fortiter transversim rugoso; tegminibus pronoto dilutioribus, perdense punctatis, parum nitidis, leviter albido-pubescentibus; corpore subtus nigro-piceo, pedibus piceis vel fusco-testaceis.

Oval or suboblong, of a unicolorous pitchy colour, with very faint traces of four lighter spots at the margins of the tegmina, which are scarcely apparent unless the insect is examined closely; head and pronotum shining, the former rather deeply excavate on the vertex, the latter closely and rugosely sculptured, with several strong impressions in front; scutellum broad in front, produced into a long point behind, trans-

versely and strongly rugose; tegmina very finely sculptured, very finely pubescent, the apex rugosely reticulate, but not strongly; legs fusco-testaceous, in part pitchy.

Long. 9 millim.; lat. max. 5 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 8000 feet (*Champion*).

This species is allied to *Sphenorhina simplex*, Walk. (Insecta Saundersiana, Homopt. p. 90), from Colombia, but, according to the old division, it belongs to a different genus.

The specimens from Bugaba are somewhat more oblong than those from the Volcan de Chiriqui, and among them are two with traces of distinct rows of spots on the tegmina; it is possible that they may belong to another species, but I cannot satisfactorily separate them. An example from the Volcan de Chiriqui is figured.

14. **Tomaspis ignobilis,** sp. n.

T. viliori affinis, sed multo minor, sculptura crassiori; parva, nigra, sat nitida, metopidio haud producto; pronoto fortiter rugoso, lineâ centrali distincte elevatâ; tegminibus dense sat fortiter subrugoso-punctatis, apicibus haud reticulatis, vittâ albidâ sat latâ ad marginem pone medium, maculâque parvâ obscure albidâ in eâdem lineâ prope suturam positâ utrinque instructis; corpore subtus fusco, pedibus piceo-testaceis.

A small and inconspicuous, but distinct species; black, rather shining; head moderately large, with the metopidium not produced; pronotum nearly twice as broad as long, coarsely and rugosely sculptured, with a strongly raised central line, on each side of which is a depression; scutellum much less coarsely punctured than the pronotum; tegmina strongly punctured, with hardly a trace of rugose reticulation at the apex, with a rather broad whitish horizontal band behind the middle reaching from the margin to near the middle, and a small obscure whitish spot (sometimes hardly traceable) between this and the suture; underside fuscous; legs pitchy-testaceous.

Long. $6\frac{1}{2}$ millim.; lat. max. 3 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

15. **Tomaspis sepulchralis.**

Tomaspis sepulchralis, Stål, Stett. ent. Zeit. xxv. p. 65 (1864) [1].

Hab. MEXICO [1] (*Mus. Vind. Cæs.; Mus. Oxon.*).

Stål's description [1] is as follows:—"Pubescens, nigricans, nitida; margine angusto basali thoracis basique ipsâ tegminum sanguineis." In one of the specimens referred to from the Vienna Museum the lateral margins of the pronotum are red, as well as the basal margin, while in the Oxford Museum specimen the shoulders only are slightly red, and the pronotum is entirely black.

The species is not represented in our collection. I have seen three specimens of it, all males, including the one in the Oxford Museum.

16. **Tomaspis obscura,** sp. n.

Præcedenti similis, sed nigra, maculis quibusdam parvis rufis ad medium et pone medium tegminum lineatim dispositis; capite magno, metopidio producto, oculis haud prominentibus; pronoto dense rugoso, tegminibus subtiliter sculpturatis, apicibus haud reticulatis; corpore subtus pedibusque piceis.

An oval, robust species, black, with some very small red spots arranged in two transverse rows on the tegmina,

which are very finely sculptured; head large, with the metopidium produced; apex of the tegmina with scarcely a trace of rugose reticulation; legs pitchy.

Long. 9 millim.; lat. max. $5\frac{1}{2}$ millim.

Hab. MEXICO (*Signoret, in Mus. Vind. Cæs.*).

A single specimen, standing under the MS. name of *Sphenorhina obscura*. The species is not represented in our collection.

17. **Tomaspis miles,** sp. n. (Tab. XI. figg. 12, 12 *a*.)

Oblongo-ovata, leviter pubescens; capite (vertice nigro excepto), oculis ocellisque sanguineis; metopidio producto; pronoto longitudine sesquilatiori, viridi-æneo, marginibus utrinque antice rufis, dense sat fortiter punctato; scutello nigro, leviter rugoso; tegminibus sanguineis, vittâ latâ ad medium et tertiâ parte apicali nigrâ, dense subtiliter punctatis, ad apicem leviter reticulatis; corpore subtus piceo, femoribus piceis, coxis, genibus, tibiis tarsisque ad partem rufo-testaceis.

Oblong-ovate, very finely pubescent; head red, the vertex in part black; metopidium produced; pronotum dark, with an æneous reflection, rugosely punctate, the sides rather broadly red; tegmina very closely and finely punctured, dull, scarlet, with a broad band at the middle and the apical third black; femora pitchy, the tibiæ and tarsi mostly rufo-testaceous.

Long. 11 millim.; lat. max. $5\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

This is a very handsome and distinct species. On remounting the single specimen received I found an Acarid (apparently a *Gamasus*) which had evidently been attached to it; I have not before noticed that any homopterous insects have been attacked by Acari.

18. **Tomaspis handlirschi,** sp. n. (Tab. XI. figg. 13, 13 *a*.)

Oblongo-ovata, brunneo-rufa; capite unicolori, metopidio peracute producto; pronoto margine anteriori quatuor maculis flavis instructo, marginibusque posterioribus rufo-flavis, longitudine fere duplo latiori, distincte sat fortiter punctato; tegminibus maculis octo (quatuor utrinque) ante medium, quatuorque pone medium (duabus utrinque) rufo-flavis lineatim dispositis, apicibus vix reticulatis; pectore abdomineque rufis, pedibus piceo-rufescentibus.

Of a brownish-red colour, with four spots on the margin of the pronotum (two at the angles and two in the middle) yellow, and the posterior margin orange, and with ten orange spots on the tegmina—six in front of and four behind the middle, arranged in two transverse lines; pronotum distinctly punctured, rather shiny; scutellum comparatively small; tegmina very finely sculptured, dull; abdomen and breast red; legs pitchy-red.

Long. 12 millim.; lat. max. 6 millim.

Hab. CENTRAL AMERICA (*Mus. Vind. Cæs.*).

One specimen, labelled "Friedth. 839." This is a very distinct and unmistakable species, although it is possible that, when more are discovered, the ground-colour will be found to be somewhat darker. I have named this insect after Herr Handlirsch, of the Vienna Museum, who has kindly assisted me in sending specimens for examination.

19. **Tomaspis contigua.**

Triecphora contigua, Walk. List of Homopt. Ins. iii. p. 670[1].

Hab. HONDURAS (*Dyson*[1], *in Mus. Brit.*).

This species is not represented in our collection.

20. **Tomaspis jugata,** sp. n. (Tab. XI. figg. 14, 14 *a*.)

Oblongo-ovata, nigra, cærulescens; capite, pronoto scutelloque obscure cæruleis vel viridi-æneis, unicoloribus; metopidio rotundato; pronoto longitudine tertiâ parte longiori, haud nitido, dense sat fortiter rugoso-punctato; tegminibus margine interiori basali duabusque fasciis transversis miniatis; pectore et abdomine rufis, pedibus piceis, femoribus et tibiis posterioribus rufescentibus.

Head, pronotum, and scutellum unicolorous, with metallic reflections; pronotum dull, closely and rather strongly rugose; tegmina very dark blue, almost black, with the interior basal margin and two bands scarlet; the scarlet basal margin forms a **V**-shaped mark bounding the posterior margins of the pronotum and the scutellum, the hinder part of which meets the first band at the suture; this band is slightly waved just before the margins, where it is thickened; the hinder band is curved very slightly towards the apex, which is plainly reticulate; abdomen and breast red; legs pitchy, the posterior femora and tibiæ rufescent.

Long. 10 millim.; lat. max. 5 millim.

Hab. GUATEMALA (*coll. Signoret, in Mus. Vind. Cæs.*).

There are two specimens in the Vienna Museum standing under the MS. name of *Sphenorhina lævicollis*, Signoret: one, labelled as from New Granada, is slightly immature, and has the pronotum bright, shining, and rather finely punctured; the other, from Guatemala, has the pronotum dull and rugose, and it is from this that I have described the species.

21. **Tomaspis rubra.** (Tab. XI. figg. 15, 15 *a*; 16, var.)

Cicada rubra, Linn. Syst. Nat. i. 2, p. 711 (1767)[1].

La Cigale Rouge à bandes jaunes, Stoll, Cigales, p. 23, t. 2. fig. 10 (1780)[2].

Cercopis rubra, Germ. Mag. Ent. iv. p. 41 (1821)[3].

Sphenorhina rubra, Am. et Serv. Hist. Nat. des Ins. Hémipt. p. 563[4]; Walk. List of Homopt. Ins. iii. p. 688[5].

Cercopis cruentata, Fabr. Syst. Rhyng. p. 91[6].

Cercopis sororia, Germ. Mag. Ent. iv. p. 41[7].

Sphenorhina sororia, Walk. List of Homopt. Ins. iii. p. 693[8].

Cercopis bicincta, Say, Journ. Acad. Phil. vi. p. 303[9]; Complete Writings, ii. p. 381[10].

Sphenorhina latifascia, Walk. List of Homopt. Ins. iii. p. 688[11].

Hab. NORTH AMERICA, Indiana[9 10].—MEXICO, Orizaba (*Bilimek, in Mus. Vind. Cæs.*); GUATEMALA (*coll. Signoret, in Mus. Vind. Cæs.*); PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA[11]; VENEZUELA; GUIANA, Surinam[2 6]; BRAZIL[4 5 8], Rio Negro, Bahia[3], S. Paulo[7]; PERU, Lima[9].

All the specimens in our collection are from the Volcan de Chiriqui. They have the head and basal half of the pronotum and, at least, the front part of the scutellum

black, the front part of the pronotum being always red; the two broad light bands on the tegmina are either red or yellow. There is a single specimen from Guatemala in the Vienna Museum belonging to the same form, with the bands red, labelled *Sphenorhina trifasciata*, Signoret, in litt. I have only seen one example of the typical *T. sororia* from Central America, although it appears to be the most abundant of the Cercopidæ in the northern districts of South America; it has the head, pronotum, and scutellum entirely red, and the tegmina black, with two broad yellow bands. The form in our collection appears to replace it further north, and is no doubt identical with *Cercopis bicincta*, Say. Of this insect, Say says that it "resembles the *rubra*, Linn., and *sororia*, Germ., but is sufficiently distinct"; the difference, however, only appears to be one of colour, and the species is evidently variable in this respect.

In the Vienna Museum collection are four specimens named *Sphenorhina tricolor*, Signoret, in litt., which only differ in having the base of the tegmina yellow (unicolorous with the front band), and two named *S. flavicincta*, Signoret, in litt., which have the hinder band wanting; they are, however, only varieties of the typical *sororia* form, and serve to show how it varies in colour. Some of the same varieties may be seen in the British Museum collection. Two forms from the Volcan de Chiriqui are figured.

22. **Tomaspis laterinotata,** sp. n. (Tab. XI. figg. 22, 22 *a*.)

Oblongo-ovata, sat angusta, rufo-brunnea, capite sat magno, metopidio haud producto, rotundato; pronoto sat fortiter rugoso-punctato; tegminibus utroque maculâ albidâ elongatâ, pone humeros, marginem vix attingente, sat fortiter sculpturatis, apicibus haud reticulatis; corpore subtus dilutiori, pedibus brunneo-testaceis.

Rather long, oblong-ovate, of a dark castaneous or rufous-brown colour, with two abrupt whitish spots on the tegmina behind the shoulders, which are elongate and scarcely touch the margin, a very thin line of darker colour separating them from it, except just at the base; head rather large, with the metopidium rounded, not compressed or produced; pronotum rugosely and rather strongly, but not deeply, punctate; sculpture of the tegmina comparatively strong, the apices not reticulate; clavus separated from the corium by a deep furrow; underside light testaceous; legs testaceous.

Long. 10 millim.; lat. max. $4\frac{1}{2}$ millim.

Hab. Mexico (*Mus. Oxon.*).

23. **Tomaspis postica.** (Tab. XI. figg. 18, 18 *a*.)

Monecphora postica, Walk. List of Homopt. Ins., Suppl. p. 177 (1858) [1].

Tomaspis pictipennis, Stål, Stett. ent. Zeit. xxv. p. 63 (1864) [2].

Hab. Mexico (*Sallé* [1]), Vera Cruz (*Mus. Holm. & coll. Signoret* [2]), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*); Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*).

There is a large series of this pretty and distinct species in our collection. A single example from Costa Rica belongs to a somewhat dark variety. We figure a specimen from Teapa.

24. **Tomaspis lepidior,** sp. n. (Tab. XI. figg. 19, 19 *a*.)

Oblongo-ovata, leviter pubescens, capite et pronoto viridi- vel cæruleo-æneo, illo modico, metopidio haud producto, hoc longitudine sesquilatiori perdense subtiliter subrugose punctato; scutello viridi-æneo, leviter rugoso; tegminibus nigris, margine interiori basali et maculis quatuor pone scutellum lineatim dispositis, duabusque pone medium ad suturam, rufescentibus, quatuorque præterea marginem attingentibus sat magnis dilute testaceis; corpore subtus, capite et pectore antice fusco excepto, rufescente; pedibus piceis, genibus et femoribus tibiisque posticis plus minusve rufescentibus.

Oblong-ovate, with fine yellowish pubescence; head, pronotum, and scutellum dark, with metallic reflections; pronotum very closely and subrugosely sculptured; tegmina black, with the inner basal margins broadly rufescent; just behind the scutellum there are four reddish spots in a line (two on each tegmen), the two inner ones being often almost confluent, and just behind the middle are two similar spots, answering to the two inner spots behind the scutellum; at the margins are four light testaceous spots (two on each tegmen, one before and one behind the middle); underside red, except the front part; legs pitchy, with the knees and the posterior femora and tibiæ, in part at least, rufescent.

Long. 7–8 millim.; lat. max. $3\frac{1}{2}$–4 millim.

Hab. Panama, Bugaba (*Champion*).

A considerable series. This is one of the most distinct and pretty species among the smaller Cercopidæ.

25. **Tomaspis simulans.** (Tab. XI. figg. 20, 20 *a*.)

Sphenorhina simulans, Walk. List of Homopt. Ins., Suppl. p. 183 (1858) [1].

Tomaspis fasciaticollis, Stål, Stett. ent. Zeit. xxv. p. 63 (1864) [2].

Hab. Mexico (*Sallé* [1]; *Mus. Holm. and coll. Signoret* [2]), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Rincon, Chilpancingo, and Acaguizotla in Guerrero, Teapa in Tabasco (*H. H. Smith*), Cuernavaca (*Bilimek, in Mus. Vind. Cæs.*), Jalapa (*Höge*), Orizaba (*Bilimek, in Mus. Vind. Cæs.; H. H. Smith and F. D. Godman*).

This is a small species, with the ground-colour dark, with two distinct white or whitish-yellow bands across the tegmina, and one across the pronotum. It is variable, and presents four distinct forms:—

a. Black or fuscous, with the light bands broad and distinct, and the head, the margins of the pronotum, the basal angle of the tegmina, and legs and underside more or less testaceous. This is the common form.

b. Pronotal band very narrow; tegmina without light bands. This is the var. "tegminibus impictis" of Stål; it is not represented in our collection, but there is a specimen in the Vienna Museum labelled as presented by Stål.

c. Black, with the light bands much narrower, often reduced to mere lines or elongated spots of a clearer white colour; abdomen red; legs mostly red or black, with the posterior femora and tibiæ red. Size smaller.

d. Pronotum without white band. Size smaller.

It is possible that one or two of these may belong to distinct species, but they can hardly be described without more material.

Stål compares *T. fasciaticollis* with *T. bicincta* (Say), and says it is closely akin to it; but Say says of his *T. bicincta* that it resembles *Cercopis rubra* and *C. sororia*, Germ., which are quite different insects.

This species is one of the instances in which Stål totally ignores Walker's description, although it is quite satisfactory; he has done the same with *Monecphora postica*, Walk.=*T. pictipennis*, Stål, and *Sphenorhina assimilis*, Walk.=*T. varians*, Stål. All three of these species are described by Walker as from Mexico (*Sallé*), and yet Stål, though he styles his papers "Hemiptera Mexicana," makes no allusion to any of them.

T. simulans, so far as the formation of the metopidium is concerned, is intermediate between *Monecphora* and *Sphenorhina*, and serves to show how unsatisfactory a generic character this is.

A specimen of the type form from Teapa is figured.

26. **Tomaspis prænitida,** sp. n. (Tab. XI. figg. 23, 23 *a*, *b*.)

Oblonga, nigro-picea, nitida; capite sat lato, metopidio haud producto; pronoto latitudine fere duplo longiori, pernitido, lævi, remotius punctato; scutello magno; tegminibus piceis, dense, antice fortius, punctatis, vittâ subalbidâ undatâ pone scutellum, alterâque pone medium instructis, apice haud reticulato; corpore subtus piceo, abdomine nigro; pedibus piceis.

Oblong, broader in front than behind, the front parts very shiny; pitchy-black, with a whitish wavy band behind the scutellum and another behind the middle, the suture between these bands being lighter than the ground-colour; head broad; pronotum very shining, about twice as broad as long, diffusely and shallowly punctured; scutellum large, brownish, produced into a sharp point behind; tegmina rather strongly punctured at the base, very finely so towards the apex, which is not reticulately rugose; underside and legs pitchy, the abdomen black.

Long. $8\frac{1}{2}$ millim.; lat. max. $3\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui 2500 to 8000 feet (*Champion*).

27. **Tomaspis apicifasciata,** sp. n. (Tab. XI. figg. 24, 24 *a*.)

Parva, brevis, oblonga, nitida, nigra vel nigro-picea; capite brevi, sat lato, oculis permagnis, prominentibus; metopidio haud producto, æquali; pronoto longitudine sesquilatiori, sat fortiter punctato; scutello leviter rugoso, peranguste albido marginato; tegminibus subtiliter punctatis, limbo albido sat lato, suturam attingenti, paullo ante apicem instructis; corpore subtus pedibusque piceis.

A small, short, oblong species, black, with a broad white band a little before the apex, reaching across the tegmina; head short, but broad, the eyes large and prominent, the metopidium not produced; pronotum shining, rather strongly and somewhat closely punctured; tegmina very finely punctured behind, more evidently so in front, scarcely reticulate at the apex; legs pitchy.

Long. $7\frac{1}{2}$ millim.; lat. max. 4 millim.

Hab. Panama, Bugaba (*Champion*).

28. **Tomaspis distincta.** (Tab. XI. figg. 17, 17 *a*.)

Sphenorhina distincta, Distant, Trans. Ent. Soc. Lond. 1878, p. 178[1].

"Black, shining, thickly and finely punctured. Head, thorax, and scutellum slightly pilose. Reticulated portions of tegmina somewhat ferruginous; corium black, shining. Abdomen and posterior legs (tarsi excepted, which are black) sanguineous. Wings obscure hyaline, somewhat fuscous at outer borders. Posterior tibiæ armed with a strong spine. Scutellum large, transversely striated. Long. ex. tegm. 6 millim.; exp. tegm. 18 millim."

Hab. Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*[1]).

This is a small, obscure, dark species, with the tegmina dark brown or purplish-own, somewhat lighter towards the apex, and the abdomen red.

29. **Tomaspis plagiata.** (Tab. XI. figg. 21, 21 *a*.)

Sphenorhina plagiata, Distant, Trans. Ent. Soc. Lond. 1878, p. 178 [1].

"Testaceous; thorax black, with the anterior and lateral edges and a transverse central band testaceous. Eyes luteous. Pectus and abdomen black, the last with the posterior segmental edges and the anal appendage obscure testaceous. Legs testaceous, with a pitchy streak on femora, commencing at base. Pronotum and tegmina thickly and finely punctured. Wings obscure hyaline. Posterior tibiæ armed with two spines, one near the base small, the second a little past middle long, robust. Long. ex. tegm. 8 millim.; exp. tegm. 18 millim."

Hab. Costa Rica (*Van Patten* [1]).

Mr. Distant describes this insect as testaceous, but in the unique type the prevailing colour is bright red, the tegmina being unicolorous and almost scarlet.

30. **Tomaspis septemnotata.**

Sphenorhina septemnotata, Distant, Trans. Ent. Soc. Lond. 1878, p. 179 [1].

"Fulvous, shining, tegmina with seven small orange spots, three in a transverse line near base, two near middle, and two near apex; there is also a small orange patch at base. Wings pale hyaline. Hind tibiæ armed with two spines, first small, near base, the second long, robust, a little past middle. Long. ex. tegm. 6 millim.; exp. tegm. 20 millim."

Hab. Costa Rica, Rio Sucio (*Rogers* [1]); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This is a small species, with the tegmina fulvous-hyaline, and with seven very indistinct small orange spots on each. I am inclined to believe that it is immature, and have doubtfully referred to it a few immature specimens of a species from the Volcan de Chiriqui.

31. **Tomaspis turpior,** sp. n.

Oblonga, fusco-picea, leviter pubescens, oculis sat prominentibus; metopidio compresso, leviter producto; pronoto nitidiori, longitudine fere duplo latiori, sat fortiter punctato, lineâ centrali distincte elevatâ; tegminibus haud nitidis, ad apicem subtilissime, ad basin fortius sculpturatis, apicibus reticulatis, fuscis, maculis quibusdam perobscure testaceis; corpore subtus pedibusque piceo-testaceis, ad partem fuscatis.

Oblong, pitchy, scantily pubescent; pronotum shining, rather strongly but not deeply punctured, with a very distinct central line; scutellum very finely transversely rugose; tegmina dull, of a fuscous-pitchy-colour, with obscure testaceous markings, some of which are often almost invisible or absent; in the type-specimen there is a lighter spot where the corium joins the pronotum, and two lighter bands across the tegmina before and behind the middle, more or less broken into spots, the outer ones being the lightest; the tegmina are plainly reticulate at the apex; legs and underside pitchy-testaceous, in part fuscous.

Long. 7–7½ millim.; lat. max. 3 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Some of the specimens are evidently immature, and it is possible that the general ground colour may be usually darker than in any of the examples in our collection.

Group 4.

The insects belonging to this group have a very distinct facies, as a rule, although *T. imperans* is, perhaps, a somewhat intermediate species. There is no tangible character on which to separate them generically. They appear to be very variable in colour.

32. **Tomaspis imperans,** sp. n. (Tab. XI. figg. 25, 25 *a*; 26, var. *sexnotata.*)

Oblonga, sat angusta, sat nitida, nigra, capite, pronoto (disco fusco excepto), scutello, basi limboque marginali tegminum ante apicem abrupte terminato, sanguineis; metopidio producto; pronoto longitudine duplo latiori, nitido, remote et haud profunde punctato; tegminibus dense subtiliter punctatis, apicibus sat fortiter rugoso-reticulatis; corpore subtus piceo, metasterno rufo, abdomine pedibusque nigris.

Oblong, parallel, black, with the head and metopidium (which is produced) scarlet; pronotum twice as broad as long, shining, somewhat diffusely and distinctly punctured, scarlet, with the disk dark to the sides; scutellum large, finely rugose, unicolorous scarlet; tegmina black, with the base and a broad marginal band ceasing abruptly a little before the apex scarlet, the colour being very distinctly marked, the punctuation very close and fine, the apex plainly rugose-reticulate; underside dark, the metasternum red; legs black.

Long. 10 millim.; lat. max. $4\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Var. **sexnotata.**

Colore nigro, differt basi pronoti sat late, lateribus anguste, apice tantum scutelli, et tribus maculis tegminum utrinque sanguineis.

Black, with the base of the pronotum broadly and the sides narrowly scarlet; the apex only of the scutellum is of the same colour, and the scarlet marginal band of the tegmina is replaced by three spots on each side—one at the base, one before the middle, and the third behind the middle.

Long. 10 millim.; lat. max. $4\frac{1}{2}$ millim.

Hab. Panama, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

33. **Tomaspis assimilis.** (Tab. XI. figg. 27, 27 *a*; 28, var.)

Sphenorhina assimilis, Walk. List of Homopt. Ins., Suppl. p. 182 (1858) [1].

Tomaspis varians, Stål, Stett. ent. Zeit. xxv. p. 65 (1864) [2].

Hab. Mexico (*Sallé* [1]), Omilteme, Xucumanatlan, and Sierra de las Aguas Escondidas, all in Guerrero, 7000 to 8000 feet (*H. H. Smith*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Oaxaca (*Mus. Holm.*[2]; *Mus. Brit.*); Guatemala, San Gerónimo (*Champion*).

Stål enumerates four varieties of this species. In the type form the head and the front of the pronotum are red, and the hinder part of the latter, except the posterior margin (which is dark), is light testaceous; the tegmina are dark, with a light testaceous longitudinal subcostal stripe, which is curved and enlarged in front and behind and almost encloses a dark oval space divided by the suture; this band, however, varies and is often quite straight and not thickened behind; the colour of the head and pronotum is also variable. A single specimen from San Gerónimo in

our collection is almost entirely of a fuscous colour, and has the pronotum rather more distinctly punctured; it possibly belongs to a distinct species.

I have been enabled to identify Stål's insect through the kindness of Dr. Aurivillius, who lent me a typical specimen.

We figure two examples from Omilteme, one of which (fig. 28) is a variety.

34. **Tomaspis lineata.** (Tab. XI. figg. 29, 29 *a*; 30, 30 *a*, var. *similis*.)

Sphenorhina lineata, Walk. List of Homopt. Ins. iii. p. 691 (1851) [1].
Sphenorhina parallela, Walk. loc. cit. p. 694 [2].
Sphenorhina bivitta, Walk. loc. cit., Suppl. p. 181 (1858) [3].
Sphenorhina cruciata, Walk. loc. cit., Suppl. p. 183 [4].
Sphenorhina similis, Walk. loc. cit., Suppl. p. 182 [5].
Tomaspis vittatipennis, Stål, Stett. ent. Zeit. xxv. p. 64 (1864) [6].
Tomaspis ornatipennis, Stål, loc. cit. p. 64 [7].

Hab. Mexico (*Sallé* [3 4 5]; *Mus. Holm.* [6 7] *and coll. Signoret* [6]), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Amula and Chilpancingo in Guerrero, Teapa in Tabasco (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*), Valladolid in Yucatan (*Gaumer*); Honduras (*Dyson* [1], *in Mus. Brit.*); Nicaragua, Chontales (*Janson*).—South America [2].

This is a very variable insect, the ground-colour varying from bright scarlet to a dirty testaceous, and the smallest specimens being about half the size of the largest. It is not, therefore, to be wondered at that a considerable number of species have been described which must be sunk as synonyms; a glance over our series and the specimens in the British Museum will show how they lead one into the other.

There can be little doubt that all the above-mentioned so-called species might be referred to *Sphenorhina lineolata*, Amyot and Serville [Hist. Nat. des Ins., Hémipt. p. 563, t. 10. f. 7 (1843)]; but, as their description is very meagre and the locality is given as "Amérique méridionale?" I prefer to adopt the above synonymy.

We figure two specimens—one, of the ordinary form, from Chilpancingo, and a variety (=*S. similis*, Walk.) from Teapa.

35. **Tomaspis nuptialis.** (Tab. XI. figg. 31, 31 *a*.)

Tomaspis nuptialis, Stål, Stett. ent. Zeit. xxv. p. 64 (1864) [1].

Hab. Mexico (*coll. Signoret* [1], *in Mus. Vind. Cæs.*).

I am inclined to regard this as an extreme variety of the preceding species; but it has the metopidium a little less produced, and is very strikingly coloured. It is not represented in our collection.

A specimen of Stål's in the Vienna Museum collection is figured.

Subfam. *PTYELINÆ.*

In this subfamily the anterior margin of the pronotum is more or less rounded and produced between the eyes, which are nearly always distinctly transverse. There are, however, as before stated, one or two transitional forms in which the eyes are round; but in these the anterior margin of the pronotum is decidedly though not strongly rounded, and a line drawn through its front part will pass at least through the middle of the eyes, whereas in the Cercopinæ the anterior margin of the pronotum is cut off in a straight line immediately behind the eyes.

The subfamily Ptyelinæ corresponds to Stål's Aphrophorida (Hemipt. Afr. iv. p. 66); in his table he makes considerable use of the characters drawn from the venation of the wings, and in some cases they appear valuable, but it is a question whether they are always quite constant.

The Ptyelinæ are not, apparently, very strongly represented in Central America, except so far as the insignificant and variable genus *Clastoptera* is concerned.

The following table will help to distinguish the Central-American genera:—

I. Eyes round or nearly round, the head slightly produced between them . . . . . *Neænus*, gen. nov.

II. Eyes distinctly transverse.

i. Clavus acuminate at the apex; submarginal vein of the wings without a small area interrupting its upper border.

1. Vertex of the head considerably produced in front of the eyes.

A. Submarginal vein of the wings with a break at the apex . *Lepyronia*, Am. et Serv.

B. Submarginal vein of the wings not interrupted at the apex.

a. Vertex about twice as long as the largest diameter of the eyes.

*a**. Posterior tibiæ shorter and stouter, with two strong and large teeth.

a†. Size larger—length 10–18 millim.; head distinctly narrower than the pronotum at the shoulders . . *Cephisus*, Stål.

b†. Size smaller—length 5–7 millim.; head at the base as broad as the pronotum at the shoulders.

a‡. Pronotum distinctly carinate . . . . . *Aphrophora*, Germ.

b‡. Pronotum not carinate . . . . . *Philænus*, Stål.

*b**. Posterior tibiæ elongate and slender, with two feeble teeth: length 8–11 millim.

a‡. Pronotum carinate . . . . . *Paraphrophora*, gen. nov.

b‡. Pronotum not carinate, with a smooth central line . . . . . *Xenaphrophora*, gen. nov.

b. Vertex two and a half or three times as long as the largest diameter of the eyes.

*a**. Head as broad as the pronotum . . . . . *Microsargane*, gen. nov.

*b**. Head distinctly narrower than the pronotum . . . *Epicranion*, gen. nov.

2. Vertex of the head short or very short, scarcely produced in front of the eyes . . . . . *Eicissus*, gen. nov.

ii. Clavus very blunt and rounded at the apex; submarginal vein of the wings interrupted by a small area on its upper border; vertex short, only slightly produced in front of the eyes . . *Clastoptera*, Germ.

NEÆNUS, gen. nov.

Oblongo-ovatus; capite sat magno; metopidio magno, convexo, lævi, vertice supra metopidium marginato, carinato; oculis a latere visis fere rotundatis, prominulis; ocellis inter se quam ab oculis minus distantibus; rostro ad coxas intermedias extenso; pronoto antice leviter rotundato, inter oculos nonnihil extenso, haud carinato, basi leviter sinuato; scutello sat magno æquilaterali; tegminibus clavo a corio suturâ profundâ separato; alis venâ tertiâ ante apicem furcatâ aream apicalem triangularem formante; pedibus robustis, tibiis posticis spinis duabus validis instructis, apice spinoso.

Oblong-ovate; head rather large; metopidium very convex and rounded, vertex carinate; eyes nearly round; ocelli distinct, more distant from the eyes than from one another; pronotum nearly twice as broad as long, gently rounded in front and slightly produced between the eyes, the base slightly sinuate; scutellum nearly equilateral, pointed behind; tegmina, taken separately, broadly rounded at the apex, the corium separated from the clavus by a deep suture; wings with the third vein from the outer marginal vein forked and enclosing a somewhat large triangular apical area; legs robust; posterior tibiæ with two strong sharp spines, the lower one being the longest, and with a strong circle of smaller spines at the apex.

This genus appears to form a transition between the Cercopinæ and the Ptyelinæ. The species described is in general appearance much like a very small *Cercopis*.

1. **Neænus varius**, sp. n. (Tab. XII. figg. 1; 2, var.)

Niger, supra haud nitidus, vertice subtiliter rugoso; metopidio nitido; pronoto sat fortiter rugoso; tegminibus dense et distincte subrugoso-punctatis, maculis duabus ad basin, duabusque pone medium, testaceis vel flavo-rufescentibus, variantibus, interdum deficientibus; pectore piceo-testaceo; pedibus piceis.

Black, rather dull above, shining on the underside; vertex finely rugose, subexcavate; pronotum rather strongly, scutellum finely, transversely rugose; tegmina distinctly and very closely rugose-punctate, each with an oblong straw-coloured patch at the base, occupying half of the clavus, but not extending to the corium, and a round and rather irregular spot behind the middle quite separate from the margins: these spots are very variable in size, and are sometimes in part or wholly absent; abdomen black, chest pitchy-testaceous; legs pitchy.

The chief varieties appear to be as follows:—

a. Front spots large, straw-coloured; hind spots moderate, orange.
b. Front spots much reduced, straw-coloured or orange.
c. Hind spots much reduced or absent.
d. Tegmina entirely unicolorous black, without spots.

Long. 6 millim.; lat. max. $2\frac{1}{2}$ millim.

Hab. Mexico, Jalisco (*Schumann*), Chilpancingo 4600 feet, Amula 6000 feet, Soledad 5500 feet, and Xucumanatlan 7000 feet, all in Guerrero (*H. H. Smith*).

Aphrophora inclyta and *A. maura*, Walk., from Sarawak (List of Homopt. Ins., Suppl. p. 187), appear to be allied to this species.

We figure two specimens—one from Soledad and one from Amula.

CEPHISUS.

Cephisus, Stål, Hemipt. Afr. iv. p. 67 (1866) ; Berl. ent. Zeitschr. x. p. 384; Hemipt. Fabr. ii. p. 18.
Aphrophora, Walker, List of Homopt. Ins. iii. p. 697 (ex parte).

So far as regards the structure of the wings this genus is closely allied to *Aphrophora*, from which it differs in the shorter rostrum and the absence of a carina on the vertex of the head, as well as in the larger size of the species.

1. **Cephisus siccifolius.** (Tab. XII. fig. 3.)

Aphrophora siccifolia, Walk. List of Homopt. Ins. iii. p. 698 [1].
Ptyelus siccifolius, Stål, Stett. ent. Zeit. 1864, p. 65 [2].
Cephisus siccifolius, Stål, Kongl. Sv. Vet.-Ak. Handl. viii. 1 (Hem. Fabr.), p. 18 [3]; Berg, Hemipt. Argent. p. 238 [4].
Aphrophora occidentis, Walk. List of Homopt. Ins. iii. p. 699 [5].
Aphrophora diminuta, Walk. loc. cit. p. 699 [6].
Ptyelus variolosus, Walk. loc. cit., Suppl. p. 188 [7].

Hab. Mexico (*Sallé* [7]; *Höge*; *Mus. Holm.*[2]), Jalisco, Atoyac (*Schumann*), Chilpancingo, Omilteme, and Xucumanatlan in Guerrero, Teapa in Tabasco (*H. H. Smith*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*); Guatemala, El Tumbador, San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui, Bugaba, David (*Champion*).—West Coast of America (*Wood* [5 6]); South America [3 4], Brazil [2], Argentina [4].—? West Africa [1].

This large species, which is widely distributed in Central and South America, appears to have been always identified with *Aphrophora siccifolia*, Walk., recorded by him as from West Africa; possibly there is a mistake as to Walker's locality.

A specimen from Chilpancingo is figured.

LEPYRONIA.

Lepyronia, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 567 (1843) ; Stål, Stett. ent. Zeit. 1864, p. 67.

Amyot and Serville distinguish this genus as having the body "court et ramassé," and the "élytres bombées, en ovale court et en forme de coquille"; a better distinction, however, is to be found, according to Stål, in the fact that the submarginal vein of the wings is more or less widely interrupted at the apex, and the wings at rest form a fold at this point: this is very plain in the larger species, such as *L. subfasciata*, from Brazil, of which a tegmen and wing are figured (Tab. XII. figg. 4, 4 *a*).

1. **Lepyronia sordida.**

Lepyronia sordida, Stål, Stett. ent. Zeit. 1864, p. 67 [1].

Hab. Mexico (*Mus. Holm. & coll. Signoret* [1]).

Superficially, this species, which is not represented in our collection, bears a strong resemblance to *Philænus fusco-varius*, Stål. I am not quite sure whether it would not be better to separate it from *Lepyronia*; but, as I have only seen one specimen (presented by Stål to Signoret and now in the Vienna Museum), I do not feel competent to do more than pronounce an opinion. The wings appear to answer to Stål's description of the genus, but the form is quite different from that of the ordinary species of *Lepyronia*.

PHILÆNUS.

Philænus, Stål, Stett. ent. Zeit. 1864, p. 66; Hemipt. Afr. iv. p. 68 (1866).

This genus differs from *Aphrophora* in having the vertex of the head and the pronotum without carinæ, and in having the third vein from the outer marginal vein forked at some distance from the apex and forming an apical area, which is distinctly rounded at the fork.

1. **Philænus fusco-varius.** (Tab. XII. figg. 5; 6, var.)

Philænus fusco-varius, Stål, Stett. ent. Zeit. 1864, p. 66 [1].

Hab. Mexico (*Mus. Holm. & coll. Signoret* [1]), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Omilteme 8000 feet, Chilpancingo 4600 feet, and Xucumanatlan 7000 feet, all in Guerrero (*H. H. Smith*), Orizaba, Cuernavaca, Jalapa (*Bilimek, in Mus. Vind. Cæs.*); Guatemala, Chiacam in Vera Paz, Quiché Mountains 7000 to 9000 feet, Panajachel 5000 feet, Capetillo (*Champion*).

The specimens in our collection are variable in size and coloration: one, from the Quiché Mountains, is only 5 millim. in length; and one, from Omilteme, has a large whitish dorsal patch covering the greater part of the basal half of the tegmina.

We figure a specimen from Pinos Altos, and a variety from the Quiché Mountains.

APHROPHORA.

Aphrophora, Germar, Mag. Ent. iv. p. 48 (1821); Burmeister, Handb. Ent. ii. p. 121; Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 563.

The insects belonging to this genus have the vertex and pronotum plainly carinate, and the third vein from the outer marginal vein, as a rule, forked, the fork enclosing an apical area, which is more or less rounded at the apex. This last-mentioned character, however, is variable: in one species, which appears undoubtedly to be an *Aphrophora*, the fork is absent or slightly represented on one side only. The posterior tibiæ are robust, with two very strong spines, and with the crown of spines at the apex strongly marked.

1. **Aphrophora lævior,** sp. n. (Tab. XII. fig. 7.)

Brunnea, testaceo-variegata, lævior, sat nitida, capite pronotoque testaceis, hoc ad basin brunneo, antice densius postice diffuse et haud profunde punctato; scutello testaceo; tegminibus nitidis, ad apicem fere lævibus, clavo sat fortiter punctato; pedibus testaceis.

Dark brown, with the head, pronotum (except a patch at the base on each side of the central carina), scutellum, two patches at the margins of each tegmen, and other smaller markings, testaceous; head rather dull, distinctly punctured; pronotum with a rather broad central carina, rather dull and closely punctured in front, behind shining, comparatively diffusely and not deeply punctured; tegmina shining, with the clavus and the adjacent portion duller and strongly punctured, and with the apex almost smooth; underside and legs testaceous or more or less pitchy-testaceous.

Long. 6 millim.; lat. 3–$3\frac{1}{4}$ millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A rather long and very uniform series. This species is rather closely allied to *A. quadrinotata*, Say, but is differently sculptured.

2. **Aphrophora perdubia,** sp. n.

Præcedenti affinis, sed major, minus nitida, densiusque fortiusque punctata, notisque tegminum obscurioribus distincta.

Allied to the preceding, but on the average larger, evidently duller, with the punctuation more close and uniform and covering nearly the whole of the tegmina, and with the markings much less distinct; from *A. grisea* it differs in the more pointed head and general coloration.

Long. 7–8 millim.; lat. max. $3\frac{1}{2}$–4 millim.

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*); Guatemala, Chiacam, Sabo, and Purula in Vera Paz, Cerro Zunil, Capetillo (*Champion*).

The two specimens from Sabo, Vera Paz, are a somewhat intermediate form between this and the preceding species.

There is a small series in the Vienna Museum collection which must apparently be referred to *A. perdubia*; the specimens are labelled "4-*vittata*, Signoret," in litt.

3. **Aphrophora grisea,** sp. n. (Tab. XII. fig. 8.)

Grisea vel griseo-testacea, fusco-variegata; metopidio testaceo, nigro-notato, basi antennarum nigra, vertice sat magno antice rotundato, sat dense punctato; oculis magnis, prominulis; pronoto longitudine duplo latiori, distincte regulariter punctato; tegminibus ad medium plus minusve ampliatis, sat fortiter ad apicem punctatis; vittâ obliquâ irregulari aliisque notis fusco-brunneis, apicibus fusco-reticulatis; abdomine nigro, pectore pedibusque testaceis, fusco-maculatis.

Of a somewhat short-ovate form, widened in the middle of the tegmina, griseous or griseo-testaceous, with a rather distinct oblique brown band at about the middle of the tegmina and other dark markings, the cells at the apex being surrounded with dark colour and presenting a reticulate appearance; occasionally the head has a greenish reflection; head rather large, rounded, eyes large and rather prominent; punctuation distinct, regular, and fairly uniform over the whole surface, reaching plainly to the apex of the tegmina; abdomen black, underside of the metopidium, chest, and legs testaceous, variegated with fuscous; spines of the posterior tibiæ black at the apex.

Long. 6–7 millim.; lat. max. $3\frac{1}{2}$–4 millim.

Hab. Mexico, Omilteme 8000 feet, Xucumanatlan 7000 feet, and Amula 6000 feet, all in Guerrero, Teapa in Tabasco (*H. H. Smith*).

In this species the third vein from the outer marginal vein is sometimes simple and sometimes forked, enclosing a larger or smaller apical area; occasionally such an area is present on one wing and not on the other.

An example from Omilteme is figured.

Besides the specimens above described there is in our collection a single example from Balheu, Vera Paz (*Champion*), which is rather like *A. grisea*, but appears to be distinct from that species. I should not, however, care to describe it as new without further material. The single specimen of *A. grisea* from Teapa is somewhat different from the others.

PARAPHROPHORA, gen. nov.

Elongata; capite sat magno, ante oculos producto, obtuse rotundato, ocellis valde approximatis; metopidio fortiter obliquo, vertice carinato; pronoto carinato, postice fortiter sinuato, scutello fere æquilaterali; tegminibus longis; alis amplis, venâ tertiâ interiori simplici haud furcatâ, venis transversis haud obliquis; pedibus teretibus, tibiis posticis longis gracilibus, spinis duabus alterâ sub apicem parvâ, alterâ basin versus minimâ armatis.

Closely allied to *Aphrophora*, but differs in its more elongate form and, especially, in the slender legs and elongate and slender posterior tibiæ, which are armed with two spines, one near the base very small, and one before apex somewhat larger; the crown of spines at the apex of the posterior tibiæ is distinct, but not strongly marked; the third interior vein from the outer submarginal vein shows no trace of furcation.

1. **Paraphrophora simplex**, sp. n. (Tab. XII. fig. 9.)

Testacea, unicolor, sat nitida; pronoto longitudine sesquilatiori, sat fortiter punctato, carinato; scutello leviter transversim rugoso; tegminibus fortius punctatis; pedibus testaceis, tarsis ad apicem fuscatis.

Of a uniform testaceous colour, rather shining; head somewhat rugose, pronotum strongly punctured; tegmina with one or two very obscure lighter patches at the margins; legs testaceous, with the apex of the tarsi black.

Long. 8 millim.; lat. max. 3 millim.

Hab. GUATEMALA, San Gerónimo, 3000 feet (*Champion*).

XENAPHROPHORA, gen. nov.

Præcedenti valde affinis, sed major, robustior, pronoto haud carinato, lineâ lævi mediâ nitidâ; alis amplis, venâ tertiâ interiore ante apicem furcatâ; pedibus teretibus, tibiis posticis longis gracilibus, spinis duabus parvis armatis.

Very closely allied to the preceding genus, but larger and stouter, with the pronotum not carinate, the keel being replaced by a broad smooth shining line, on the surface of which there is sometimes a feeble trace of carination towards the apex; the vertex shows traces of a carina; wings with the third vein from the outer submarginal vein furcate at some distance before the apex and enclosing a long narrow apical area; legs slender, posterior tibiæ long, with two small teeth.

I at first included this genus under *Paraphrophora*, but it bears just the same relation

to the latter genus that *Philœnus* does to *Aphrophora*; and if the former two are classed together, the latter should also be united. I believe that, in the face of the occasional inconstancy of the alar venation (as in *Aphrophora grisea*), this would be the best course; but the genus *Philœnus* has been so generally adopted that I do not care to discard it in the present state of our knowledge.

1. **Xenaphrophora montana,** sp. n. (Tab. XII. fig. 10.)

Fusco-brunnea, perobscure variegata, nitida; vertice densius et rugosius punctato; pronoto longitudine sesquilatiori, distincte sed remotius punctato præcipue ad medium, lineâ centrali lævi fuscâ; scutello sparse punctato; tegminibus ad apicem angustatis, dense fortiusque punctatis, venis sat crassis nigro-fusco testaceoque variegatis.

Fuscous-brown, shining, obscurely variegated with darker and lighter colour; metopidium fuscous in front, testaceous with dark lines on each side of the centre; vertex closely and somewhat rugosely punctured; pronotum about half as broad again as long, not very closely punctured, with a broad smooth fuscous central line; tegmina fuscous, with some very obscure lighter markings, and with rather strong veins which are distinctly variegated with dark fuscous and testaceous; the punctuation is strong and distinct, and continued to the apex of the tegmina; legs fusco-piceous; underside testaceous.

Long. 10–11 millim.; lat. 4 millim.

Hab. GUATEMALA, Quiché Mountains, 7000–9000 feet (*Champion*).

Two females.

MICROSARGANE, gen. nov.

Elongata, angusta, parallela; capite magno, ante oculos producto, vertice rotundato, oculis magnis transversis, ocellis inter se et ab oculis fere æque distantibus; pronoto longitudine duplo latiori, basi emarginatâ; scutello sat magno, apice acute producto; tegminibus longis, parallelis; alis venâ tertiâ interiori ante apicem furcatâ aream apicalem sat magnam formante; pedibus teretibus, tibiis posticis spinis duabus sat robustis instructis; sculpturâ subtilissimâ.

Elongate, narrow, and parallel, very finely sculptured; head large; vertex considerably produced before the eyes, rounded at the apex; metopidium convex, nearly smooth; eyes large; ocelli almost as far distant from one another as from the eyes; rostrum moderately long, reaching the intermediate coxæ; pronotum about twice as broad as long, strongly emarginate in the centre of the base; scutellum rather large, acutely produced at the apex; tegmina long, parallel; wings with the third vein from the exterior marginal vein forked at some distance from the apex and forming a large apical area; legs slender; posterior tibiæ with two rather strong spines and a distinct crown of spines at the apex.

This is a very distinct genus, and the species described below is much more diversely coloured than is usual in the subfamily *. Walker apparently includes it under *Ptyelus*, from which it certainly must be separated.

1. **Microsargane vittata,** sp. n. (Tab. XII. fig. 11.)

Brunnea vel griseo-brunnea, leviter pubescens; lateribus verticis pronotique late testaceis, colore testaceo ad medium tegminum continuato, apicibus rufo, testaceo, nigroque variegatis, impressis; metopidio, corpore subtus, pedibusque testaceis, tarsis ad apicem fuscis.

---

* In the Oxford Museum there is an insect labelled as having been found at Otaheite by the late Charles Darwin which must apparently be referred to this genus.

Of a brown or greyish-brown colour, finely pubescent; sides of the head and pronotum broadly testaceous, this colour being continued to about the middle of the tegmina, and so forming a broad band on each side of the upper surface; tegmina with a bright red (occasionally brown-red) patch a little before the apex, with testaceous markings divided by a brown stripe at its side, and behind it black or dark brown markings, and then a light brown or testaceous band, the extreme tips being margined with dark brown; the apex has three or four deep impressions on each side; underside and legs testaceous, claws pitchy.
Long. 8–9 millim.; lat. 3 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

This insect is closely allied to *Ptyelus mutans*, Walk., described as from the west coast of America; but that species has no light bands at the sides of the pronotum and is otherwise different.

A specimen from Chontales is figured.

EPICRANION, gen. nov.

Oblongo-ovatum, levissime pubescens, subtiliter sculpturatum; capite magno, vertice longe ante oculos extenso, antice obtuse angulariter rotundato; oculis haud magnis nec prominulis, ocellis indistinctis inter se et ab oculis fere æque distantibus; metopidio longo, plano, lævi, rostro modico; pronoto longitudine fere duplo latiori, ante scutellum semicirculariter emarginato; scutello longe postice acuminato; tegminibus parallelis, apice rotundato; alis venâ tertiâ furcatâ aream apicalem sat magnam formante; pedibus brevibus, anticis intermediisque gracilibus, posticis bispinosis, spinisque robustis ad apicem armatis.

Oblong-ovate, subparallel, with fine pubescence and very close sculpturation; head large, much produced before the eyes, and with the vertex rounded in a very blunt obtuse angle; eyes comparatively small and not prominent; ocelli indistinct, about as far from each other as from the eyes; metopidium long and flat, so that the head viewed from the side is very narrow; pronotum rather broader than the tegmina behind the shoulders, strongly emarginate in a semicircle before the scutellum, which is rather large and is produced behind into a long acuminate point; tegmina very finely sculptured, slightly rugose at the apex; legs short, the intermediate and front pairs slender, the posterior pair robust; posterior tibiæ short, armed with two spines, one towards the base shorter, and the other towards the apex elongate and strong, the apex with strong spines.

This is a very distinct genus, not far removed from *Perinoia*, with which, however, it cannot be confounded. It appears also to be allied to *Clavia*, Stål.

1. **Epicranion championi**, sp. n. (Tab. XII. fig. 12.)

Brunneum, unicolor, supra haud nitidum, vertice elongato haud carinato; metopidio nitido, late excavato; pronoto subtilissime rugoso haud carinato ad medium antice perobscure impresso; tegminibus subtilissime punctatis; pectore piceo, abdomine pedibusque testaceis.

Of a unicolorous brown colour, dull above, more shining below; metopidium broadly and very shallowly excavate in the middle, with the projection of the vertex forming hollows on each side of the central portion; pronotum about twice as broad as long, very finely rugose; tegmina at the shoulders about as broad as the pronotum, slightly narrower behind, but subparallel and very little narrowed before the apex, extremely finely and closely punctured; base of the rostrum pitchy, very shining; chest pitchy; abdomen and legs testaceous.
Long. 7 millim.; lat. max. 3 millim.

Hab. PANAMA, Volcan de Chiriqui 2000–3000 feet (*Champion*).

EICISSUS, gen. nov.

Oblongus; capite vertice brevissimo, metopidio compresso carinato; oculis magnis transversis, ocellis valde approximatis; pronoto longitudine fere duplo latiori, rugoso; scutello æquilaterali, depresso; tegminibus corio subhyalino, venis plus minusve crassis; alis venâ tertiâ haud furcatâ, venis transversis valde obliquis; pedibus teretibus, tibiis posticis spinâ ante apicem armatis.

Rather short, oblong, with the vertex extremely short, scarcely projecting at all beyond the eyes, which are large and transverse; ocelli very closely approximate; rostrum long; pronotum about twice as broad as long, rugose; tegmina partly subhyaline, with the veins strongly marked; wings with the third vein from the outer marginal vein not forked, and the transverse veins very oblique; legs slender; posterior tibiæ with one spine a little before the apex, and the apex with a crown of short and rather stout spines.

This appears to be a very distinct genus. It is, perhaps, somewhat allied to *Carystus*, Stål, which is peculiar to Australia and Tasmania. The female, at first sight, closely resembles certain species of Issidæ.

1. **Eicissus decipiens,** sp. n. (Tab. XII. figg. 13, 13 *a*, *b*.)

Fusco-brunneus vel fusco-testaceus, interdum antice colore dilutoriori, rugose sculpturatus; rostro elongato; sculptura pronoti tegminumque quoad sexum variante; pedibus gracilibus, testaceis vel piceis.

Mas angustior, postice acuminatus, pronoto dense subtiliusque rugoso, tegminibusque antice densius fortiusque punctatis, postice leviter vel vix reticulatis.

Femina latior et amplior, pronoto fortiter rugoso, tegminibusque corio (parte basali cum clavo fortiter punctatâ exceptâ) crasse reticulato, venis exstantibus.

Of a dark fuscous colour, with the front half sometimes testaceous; metopidium sometimes light, abdomen black or pitchy, but variable; shape and sculpture varying in the sexes; legs slender, testaceous or pitchy.

♂. Narrower, with the tegmina less ample and when closed meeting behind in a point; pronotum and tegmina more finely sculptured, and the veins of the latter, as a rule, much less strongly marked; the sculpture, however, is somewhat variable.

♀. Broader, with the pronotum very strongly rugose, and the sculpture of the tegmina much coarser, the greater part of the corium being strongly reticulate with large outstanding veins.

Long. 6–7 millim.; lat. max. $2\frac{1}{2}$–3 millim.

Hab. GUATEMALA, Chiacam, Senahu, and Sinanja in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui 2500–8000 feet (*Champion*).

In the small series from the Volcan de Chiriqui the sculpture of the males is variable, but they all apparently belong to one species. I believe I am right as to the sexes, but as the specimens are mounted on card I have not examined all of them.

A specimen from the Volcan de Chiriqui is figured.

CLASTOPTERA.

Clastoptera, Germar, Zeitschr. für Ent. i. p. 187 (1839); Walker, List of Homopt. Ins. iii. p. 842.

This genus contains a considerable number of very small and inconspicuous species, which are, apparently, widely distributed in North, Central, and South America. They are very variable in coloration, and it is almost impossible to distinguish them by

descriptions *. The various species may at once be known by their small size and globular or semiglobular appearance. The clavus is very bluntly rounded at the apex, and in the specimens which I have examined closely the outer marginal vein of the wings is interrupted by an elongate irregular-oval area at some little distance before the tip; the third vein from the marginal vein is not furcate.

In the Vienna Museum collection, besides a large number of unnamed specimens, there are no less than nine species named by Signoret, of which I can find no trace in any publication; I conclude, therefore, that they are all manuscript names; three of these species are from California and six from Mexico.

1. **Clastoptera funesta.** (Tab. XII. figg. 14; 15, var.)

Clastoptera funesta, Stål, Öfv. Kongl. Vet.-Ak. Förh. 1854, p. 253 [1].

Hab. Mexico, Chilpancingo in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Cuernavaca and San Marcos (*Bilimek, in Mus. Vind. Cæs.*), Orizaba (*Sallé, Bilimek, H. H. Smith, F. D. Godman*); Guatemala, Tamahu in Vera Paz, Guatemala city (*Champion*); Honduras (*Mus. Holm.* [1]); Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

The specimens in our collection which I have referred to this species (about 150 in number), and those in the Vienna Museum (about twenty-five in number), are very small globose insects, and have the upper surface in most cases of a uniform shining black colour, or black with the base of the scutellum broadly light yellow. The head, legs, and underside are all more or less yellow, and the metopidium is usually furnished with a transverse black line. The apical portion of the tegmina is, as is usual in the genus, more or less broadly hyaline, and is furnished on each side at the inner angle with a dark callosity. In some specimens there are lighter markings or obscurely lighter bands on the tegmina, and others are more or less castaneous, but these appear to be immature.

I was at first inclined to refer the insects which I have placed under this species to *C. proteus*, Fitch, but, after examining the specimens of *C. proteus* in the British Museum I have altered my opinion. I have not seen a named specimen of *C. funesta*, Stål, but from the description I have little doubt that his insect belongs to the entirely black form of the present species. It is possible that three or four of the species alluded to or described by Stål in the 'Bidrag till Rio Janeiro-Traktens Hemipter-Fauna,' ii. pp. 16, 17 (as *C. scutellata*, Germ., *C. pallidiceps*, Stål, and *C. tibialis*, Stål), may be synonymous with this variable and evidently abundant species, but I have not seen any typical specimens of these insects. In the Vienna Museum collection three

* Stål, 'Bidrag till Rio Janeiro-Traktens Hemipter-Fauna,' ii. p. 16, says: "Species hujus generis non nisi coloribus inter se differunt, plurimæ difficillime distinguuntur et describuntur: aliæ igitur certe aliarum tantum varietates." The punctuation and general size and shape, however, afford fair characters in some cases.

single specimens, named by Signoret, in litt., as *C. globulus*, *C. annulipes*, and *C. nigrifrons*, appear to belong to *C. funesta*; they are all labelled as from Mexico.

We figure a specimen of the type form and a variety, both from Teapa in Tabasco.

2. **Clastoptera globosa,** sp. n. (Tab. XII. fig. 16.)

Rotundata, globosa, nitidiuscula, nigra, capite antice obscure rufo-brunneo, metopidio flavo; pronoto fere lævi; scutello (apice excepto) flavo, vel toto nigro; tegminibus postice dilatatis, clavo distincte punctato, corio postico fere lævi; corpore subtus nigro, coxis pedibusque flavo-testaceis.

A comparatively large, globose species, black and rather shining, with the head reddish-yellow in front and the metopidium light yellow; pronotum with slight traces of transverse rugosities and sometimes with a trace of a central line; scutellum almost entirely yellow or quite black; tegmina dilated behind and very convex; corium distinctly punctured; rostrum moderately long, yellow, with the apex black; underside black; coxæ and legs yellow or testaceous-yellow.

Long. 4–4½ millim.; lat. max. 3–3½ millim.

Hab. MEXICO, Tepetlapa 3000 feet and Chilpancingo 4600 feet, both in Guerrero (*H. H. Smith*); GUATEMALA, San Gerónimo (*Champion*).

In structure and coloration this insect closely resembles certain varieties of *C. funesta*, but it is so very much larger, being about four times the bulk of ordinary specimens of that species, that it can hardly be included in it.

An example from San Gerónimo is figured.

There are two specimens in our collection which I have doubtfully referred to this species—one from Xucumanatlan in Guerrero and one from Teapa in Tabasco (*H. H. Smith*); they are somewhat more oblong than the specimens above referred to, black, with very indistinct lighter markings on the scutellum and tegmina.

3. **Clastoptera compta,** sp. n. (Tab. XII. fig. 17.)

Oblonga, parva, nitidiuscula, nigra, metopidio testaceo; pronoto fere glabro, vel leviter impresso-lineato, vittâ latâ stramineâ; scutello nigro immaculato; tegminibus plus minusve distincte punctatis, parte dimidiâ apicali plus minusve hyalinâ, maculâ magnâ ad medium, aliâque parvâ ad marginem, stramineis; callis sat magnis colore flavo circumdatis; corpore subtus nigro, pedibus flavis.

A small, oblong, slightly shining species; black, with the metopidium testaceous, faintly lined with fuscous; pronotum almost glabrous or with fine impressed lines, with a broad straw-coloured band across the middle; tegmina slightly dilated behind, more or less distinctly punctured, with a large straw-coloured spot at the middle extending across the clavus and on to the corium, and apparently interrupted by the claval vertex; there is also a small light spot at the margin; these markings are slightly variable in some cases, but as a rule they are very constant; apical half of the tegmina more or less broadly hyaline; the apical callosities distinct and surrounded with yellow; underside black; legs yellow.

Long. 3 millim.; lat. 2 millim.

Hab. MEXICO (*coll. Signoret, in Mus. Vind. Cæs.*), Chilpancingo in Guerrero, Teapa in Tabasco (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*).

The specimens in the Vienna Museum are labelled *C. thoracica*, Sign., in litt.; as, however, there is nothing remarkable about the shape of the thorax, I have not adopted the name.

A fair series has been received from Teapa, one of which is figured.

4. **Clastoptera minima,** sp. n. (Tab. XII. fig. 18.)

Oblonga, minima, nigra, metopidio testaceo transversim nigro-lineato; pronoto leviter transversim rugoso-lineato, scutello distincte sculpturato; clavo fortiter, corio lævius punctato, apice tegminum sat late hyalino, callis parvis sed distinctis; corpore subtus pedibusque piceis.

A very small black species, with the metopidium more or less obscurely testaceous and furnished with fine black transverse lines; the pronotum is finely but distinctly sculptured in transverse lines; the clavus is strongly punctured, and the corium is less finely but distinctly punctured almost to the apex and more or less light at the sides; legs pitchy.

Long. $2\frac{3}{4}$-3 millim.; lat. 2 millim.

Hab. MEXICO, Orizaba (*H. H. Smith & F. D. Godman*), Vera Cruz (*H. H. Smith*).

The very small size, oblong shape, and strong punctuation will easily separate this species.

We figure a specimen from Vera Cruz.

5. **Clastoptera antica,** sp. n. (Tab. XII. fig. 19.)

Oblonga, haud nitida, nigra, albido-variegata; metopidio ad medium longitudinaliter nigro, utrinque concinne nigro albidoque lineato; pronoto distincte impresso lineato, albido, basi, lineâ tenui centrali, lineâque latiori utrinque arcuatâ nigris; scutello albido-variegato; tegminibus subtiliter sculpturatis ad medium albido-variegatis, apicibus haud hyalinis, callis indistinctis vel deficientibus; pedibus nigris. Variat testaceâ variegatione, pedibusque variegatis.

Oblong, dull, black, very constantly variegated with whitish; metopidium black in the centre, with lines of white and black on each side; pronotum distinctly impressed with fine lines, whitish, with the base, a thin central line, and an arcuate line on each side before the apex, black; a band of whitish variegation passes across the tegmina and scutellum, curving somewhat at the margin, and reaching more or less down the sides; apex of the tegmina not hyaline, without or with indistinct callosities; legs black, occasionally more or less variegated with whitish or testaceous.

Long. $3\frac{1}{2}$ millim.; lat. $2\frac{1}{4}$ millim.

Hab. PANAMA, Volcan de Chiriqui 2500–4000 feet (*Champion*).

This is one of the most distinct species of the genus which I have as yet come across. A short series has been received.

6. **Clastoptera semivitrea,** sp. n. (Tab. XII. fig. 20.)

Subglobosa, nitida, metopidio verticeque testaceis; hoc lineâ inter oculos, lineâque basali fuscis, illo lineâ latâ nigrâ antice notato; pronoto testaceo, disco nigro fere glabro; scutello testaceo, ad basim nigro; tegminibus testaceis, irregulariter fusco-maculatis, parte dimidia apicali hyalina, callis parvis vel minimis; pedibus testaceis.

A subglobose, moderately large, shining species, with the metopidium and vertex testaceous, with dark lines; pronotum testaceous, with the disc dark; scutellum testaceous, with a dark triangular spot at the base; the markings, however, are evidently variable, and some are probably often wanting; tegmina with the apical half hyaline, with exceedingly small, though distinct, callosities, and the basal half testaceous, glabrous, with irregular fuscous markings; underside and legs testaceous.

Long. $4\frac{1}{2}$–5 millim.; lat. 3 millim.

Hab. MEXICO, Xucumanatlan in Guerrero, Teapa in Tabasco (*H. H. Smith*).

The description is taken from the specimens from Teapa. The single example

from Xucumanatlan has the markings different, the callosities larger, and the apical half of the tegmina less transparent; it may belong to another species.

A specimen from Teapa is figured.

7. **Clastoptera flavivitta,** sp. n. (Tab. XII. fig. 21.)

Oblonga, parallela, nitida, capite antice metopidioque rufo-flavis, hoc vittâ transversali nigrâ; pronoto fere lævi; scutello, apice excepto, flavo; tegminibus piceis vel piceo-brunneis, distincte punctatis, basi anguste flavâ, coloreque ad marginem ante medium et ad apicem dilutiori; abdomine nigro; pedibus flavis, ad partem piceis.

A small, oblong, parallel, shining species, with the fore part of the head reddish-yellow; pronotum nearly smooth, with very slight traces of rugose lines; scutellum, except the apex, light yellow; tegmina pitchy-brown or black-brown, with a light patch at the margin behind the shoulders, and with the base light yellow in a line with the breadth of the yellow colour of the scutellum, the whole forming a transverse yellow band across the body immediately behind the pronotum; underside black; legs, coxæ, and part of the chest yellow, posterior legs more or less pitchy.

Long. 3–3½ millim.; lat. 2 millim.

Hab. GUATEMALA, San Gerónimo and Purula in Vera Paz (*Champion*).

We figure a specimen from Purula.

8. **Clastoptera dimidiata,** sp. n. (Tab. XII. fig. 22.)

Oblonga, nigra, nitidiuscula, capite, pronoto, scutello, apice excepto, maculâque utrinque magnâ ad basim clavi læte flavis; pronoto fere lævi, lineis transversis indistinctis; clavo leviter, corio vix punctato, fere glabro, maculâ hyalinâ ad marginem sub medium; corpore subtus nigro, coxis piceis; pedibus nigris, tarsis posticis partim testaceis.

An oblong and rather shining species, with the head, pronotum (except a very small patch at the extreme angle behind the eyes), scutellum (except the extreme apex), and a large patch near the base of the clavus, bright yellow; the actual base of the clavus and the rest of the tegmina, except a hyaline patch at the margins and one or two marks over the apex, are black; clavus lightly punctured; corium almost glabrous; the usually black callosity at the apex of each tegmen is present, but is merged into part of the coriaceous portion; legs black, the anterior and intermediate tibiæ with two yellow spots and the posterior tarsi partly testaceous.

Long. 4½ millim.; lat. max. vix 3 millim.

Hab. PANAMA, Volcan de Chiriqui 2500–4000 feet (*Champion*).

9. **Clastoptera obtusa.** (Tab. XII. figg. 23; 24, var.)

Cercopis obtusa, Say, Journ. Acad. Phil. iv. p. 339 (1824) [1]; Complete Writings, ii. p. 256 [2].

Clastoptera achatina, Germ. Zeitschr. für Ent. i. p. 187 [3].

Hab. NORTH AMERICA, Canada, United States [1 2 3].—MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*); GUATEMALA, San Gerónimo and Tactic in Vera Paz, Panajachel (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

This is a rather large oblong species, and varies considerably in colour, some specimens being light and others dark brown mottled with testaceous, while others again have the ground-colour quite black. It is allied to *C. lænata*, but is twice the size.

I have with some reserve assigned the numerous specimens from the above-mentioned Central-American localities to this apparently rather common North-American species, as I cannot satisfactorily distinguish them from typical examples of *C. obtusa*, Say, in the Oxford Museum, presented by Mr. Asa Fitch; very few, however, of the North-American species reach so far south as Mexico.

Among the specimens in our collection there is one from the Volcan de Chiriqui which is of a light testaceous-yellow colour, with the apex of the tegmina, a spot before the middle of the clavus, and the pronotal and frontal stripes fuscous; this insect very much resembles *C. lineatocollis*, Stål (from California), except that the lines on the pronotum are not nearly so marked and the punctuation is less strong. It is possible that *C. lineatocollis* is only an extreme variety of this species. In the Vienna Museum collection there is a very pretty variety from California (labelled *lineata*, Sign., in litt.) with the head and most of the pronotum nearly white and the tegmina dark brown, with the irregular whitish bands strongly marked. The larger specimens in the Vienna Museum are labelled *C. orbiculata*, Signoret, in litt.

We figure a specimen from Omilteme, and a variety from Tactic, Vera Paz.

10. **Clastoptera lænata,** sp. n. (Tab. XII. fig. 25.)

Oblonga, parva, haud nitida, brunnea vel fusco-brunnea, obscurior vel dilutior, variabilis, capite pronotoque albidis lineatim vel maculatim variegatis; scutello albido-marginato; tegminibus, corpore subtus, pedibusque brunneo-, fulvo-, castaneo-, albidoque-variegatis; pronoto transversim impresse lineato; tegminibus subtilissime punctatis, apice plus minusve hyalino vel toto colorato, callis nigris distinctis vel in colorem apicis mergentibus.

A small, oblong, dull species, of a brown or fuscous-brown colour, variegated with whitish or testaceous-white, varying very considerably in depth of shade and in markings; the markings, however, of the head and metopidium are usually in distinct transverse fine light and dark lines, while the pronotum is more or less light, with two spots in the middle and two dashes in a line with these at the sides, or it is marked more or less in bands of light and dark; occasionally the whole disc of the pronotum is dark, or the markings are entirely absent and the whole is light; the scutellum, tegmina, underside, and legs are variegated with the same colour, and are very variable in this respect, but the normal marking appears to be an irregular band of whitish colour across the middle of the tegmina, which is more or less inclined to break up and spread; the subapical callosities are distinct in the specimens which have the tegmina hyaline at the apex, but in some cases, where the apex is only partially or scarcely hyaline, they are indistinct and merge in the ground-colour; the sculpture of the tegmina is very close, rendering them in typical specimens quite dull, except at the extreme apex.

Long. 3–4 millim.; lat. 2–2½ millim.

Hab. Mexico, Ciudad in Durango 8000 feet (*Forrer*), Puebla, San Marcos, and Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Teapa in Tabasco (*H. H. Smith*); Guatemala, Balheu and San Gerónimo in Vera Paz, Cerro Zunil, El Reposo (*Champion*); Panama, Bugaba, David, and Volcan de Chiriqui (*Champion*).

There is a large series of this species unnamed in the Vienna Museum collection. I have not seen the types of the various *Clastoptera* from Rio Janeiro described by Stål (Bidrag till Rio Janeiro-Traktens Hemipter-Fauna, ii. pp. 17, 18), and it is not

unlikely that the present insect may be referable to one or more of his species 5–10. It is, however, impossible to identify these from the descriptions, and several of his so-called species are evidently nothing more than varietal forms, from what Stål says himself; he makes no allusion either to shape or punctuation. *C. triangulum*, Walk., from Bahia, very closely resembles *C. lænata*, but the type in the British Museum is broken in two, and half is lost.

A specimen from El Reposo is figured.

11. **Clastoptera ståli,** sp. n. (Tab. XII. fig. 26.)

Oblonga, sat lata, nigra, nitidiuscula, metopidio flavo-vittato; pronoto nigro flavo-marginato, subtiliter lineatim impresso; scutello late flavo-maculato; tegminibus utrinque et apice scutelli flavo notatis, clavo distincte punctato, apice fusco vix hyalino, callis permagnis nigris; pedibus piceis, posticis obscure variegatis.
Variat colore dilutiore maculisque diversis.

Oblong, rather broad, deep black, slightly shining; vertex with one, metopidium with two broad yellow bars; pronotum smooth, with traces of fine impressed lines, margined regularly all round with yellow; scutellum with a broad yellow patch before the base, and a small one before the apex; tegmina with the clavus distinctly punctured, especially towards the base, with yellow markings, which with the hinder mark on the scutellum form an irregular arc at about the middle, the apex fuscous, scarcely hyaline, the callosities very large and distinct, black; underside black, in part testaceous; legs pitchy-testaceous, with the tarsi darker and the hinder pair obscurely variegated with fuscous and testaceous. The species appears to vary considerably in colour and markings.
Long. $3\frac{1}{2}$ millim.; lat. $2\frac{1}{3}$ millim.

Hab. MEXICO, Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Las Mercedes 3000 feet (*Champion*); PANAMA, Bugaba and Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

The type-form from Las Mercedes, which is figured, seems very distinct; the others might be described as separate species on the colour-markings. *C. ståli* appears to be allied to certain forms of *C. funesta*.

12. **Clastoptera chiriquensis,** sp. n. (Tab. XII. fig. 27.)

Parva, oblonga, vix nitida, testaceo-brunnea, testaceo-variegata; capite pronotoque brunneis vel fuscis testaceo-vittatis, hoc distincte transversim lineatim impresso; scutello fere toto testaceo; tegminibus, præsertim clavo, plus minusve distincte punctatis, testaceo-brunneis testaceo-variegatis, maculâ parvâ ad marginem apicem versus calloque distincte fuscis; pedibus testaceis.

A small, oblong, slightly shining species, variegated with light brown and testaceous; head and pronotum dark, with testaceous bands, the pronotum distinctly impressed with transverse lines; scutellum entirely or almost entirely testaceous; clavus distinctly punctured; tegmina variegated with light brown and testaceous, sometimes obscurely darker in parts, with a fuscous spot at the margin towards the apex, and with well-marked callosities (the testaceous markings are arranged irregularly across the middle and spread up the sides); legs testaceous, tarsi darker, posterior pair in parts obscurely pitchy.
Long. 3–$3\frac{1}{4}$ millim.; lat. 2 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

A small and fairly constant series. At first sight this species looks like *C. lænata*, but it is more shining and the general coloration is different.

13. **Clastoptera flavifrons.** (Tab. XII. fig. 28.)

Clastoptera flavifrons, Germ. Zeitschr. für Ent. i. p. 189 [1].

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).—Brazil [1].

This is a small, oblong, brownish species, with the head, pronotum, and scutellum of a yellowish colour; structurally it closely resembles one or two allied forms, and may be only a variety of one of them. The species from Mexico in the Vienna Museum is figured.

14. **Clastoptera rufescens,** sp. n.

Parva, nitida, capite, pronoto, scutelloque rufescentibus, metopidio ad medium testaceo utrinque transversim rufo-fusco testaceoque lineato; pronoto sat fortiter transversis lineis impresso, antice testaceo-marginato; tegminibus nitidis, hyalinis, sat fortiter punctatis, venis rufescentibus, callis nigris, distinctis; corpore subtus nigro; pedibus rufo-testaceis.

A small shining species, with the head, pronotum, and scutellum rufescent; pronotum rather strongly impressed with rugose lines, the anterior margin testaceous; tegmina shining and transparent, rather strongly punctured, with the veins rufescent and without markings, the subapical callosities very distinct, black; abdomen black; legs rufo-testaceous.

Long. 3 millim.; lat. 2 millim.

Hab. Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

This species appears to be allied to the North-American *C. xanthocephala*, Germ., which is, however, a darker and less shining and transparent insect.

We have also received a specimen from Teapa in Tabasco, which I at first referred to this species, but it is rather larger, with a fuscous patch at the margin of the tegmina and very small testaceous apical callosities.

15. **Clastoptera unicolor,** sp. n. (Tab. XII. fig. 29.)

Oblonga, parva, postice nonnihil dilatata, sordide testacea, nonnihil nitida, pronoto vix transversim lineis impresso; tegminibus plus minusve distincte, interdum sat fortiter, punctatis, callis modicis, nigris, distinctis; pedibus testaceis.

A small, oblong species, more or less dilated behind, of a uniform dirty testaceous colour (occasionally reddish), with the pronotum faintly impressed with transverse lines, and the tegmina (especially the clavus) more or less distinctly punctured; legs testaceous; underside somewhat pitchy.

Long. 3 millim.; lat. 2 millim.

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*), Vera Cruz (*H. H. Smith*); Guatemala, San Gerónimo (*Champion*).

This insect appears to be inseparable from *C. arkansasensis*, Fitch, in litt., and is also allied to *C. rufescens* and *C. xanthocephala*, Germar, as well as to *C. testacea*, Fitch; the last-mentioned species is longer, and differs in several particulars.

A specimen from Vera Cruz is figured.

16. **Clastoptera irrorata,** sp. n. (Tab. XII. fig. 30.)

Præcedenti affinis, sed haud nitida, paullo latior, punctisque parvis fuscis vel nigris dense supra irroratâ.

Very like the preceding, but rather broader, with the upper surface quite dull, and closely sprinkled with more or less distinctly fuscous punctures, which are stronger on the pronotum and scutellum than on the tegmina, and are absent on the apical portion of the corium, which is broadly hyaline.

Long. $3\frac{1}{4}$ millim.; lat. $2\frac{1}{4}$ millim.

Hab. Mexico, Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

ADDENDA.

Two species have been omitted from our list of the Cercopidæ, from the genus *Tomaspis*, and are here added.

TOMASPIS (*anteà*, p. 175).

4 (A). **Tomaspis costaricensis.**

Sphenorhina costaricensis, Distant, Ent. Monthly Mag. xvi. p. 61 (1879)[1].

Hab. Costa Rica, Caché (*Rogers* [1]).

The insect described and figured by me (*anteà*, p. 177, Tab. XI. fig. 5) under the name *T.* 14-*notata*, from Chontales, Nicaragua, is perhaps nothing more than a variety of *T. costaricensis*, which has the spots on the tegmina red and the margins of the pronotum concolorous with the disc.

36. **Tomaspis conspicua.** (Tab. XIV. fig. 23.)

Sphenorhina conspicua, Distant, Ent. Monthly Mag. xvi. p. 62[1].

Hab. Costa Rica, Caché (*Rogers* [1]).

This species is quite distinct from any of the others enumerated by me.

Fam. TETTIGONIIDÆ.

The members of this family are characterized by having the ocelli, which are usually very conspicuous, on the disc of the vertex of the head, so that they look directly upwards and are at right angles to the perpendicular axis of the eyes; the latter are usually promiment; the general form is elongate, sometimes considerably narrowed behind, but usually parallel; and the hind tibiæ are multispinose.

The Tettigoniidæ include a very large number of species, the genus *Tettigonia*, as limited in this work, being cosmopolitan; the characters, however, of the genera which have hitherto been formed are most unreliable, owing to the occurrence of such a large number of intermediate forms. Amyot and Serville tried to divide the family, but apparently they had hardly any material to work upon, and Walker, while adopting their genera, seems to have had very little idea of their limits or characteristics: this is, perhaps, not to be wondered at, as nothing can be more meagre than Amyot and Serville's descriptions. Signoret, at the beginning of his Monograph [Ann. Soc. Ent. Fr. sér. 3, i., ii., iii. (1853–1855)], which still remains the most important work on the group, simply ignores all the genera and places the whole of the species under *Tettigonia*; he gives his reasons in full (*loc. cit.* i. pp. 16–18), and everyone who works at the group must agree with what he says as to the impossibility of making any satisfactory division owing to the fact that the characters always overlap in some of the species. Stål (Kongl. Svensk. Vet.-Ak. Handl. Band viii. No. 1) is the only writer who has made a serious attempt to tabulate the family, and I have thought it best, to a certain extent, to follow him, more for convenience' sake than because he has in any way settled the question, for the very large genus *Tettigonia*, containing by far the greater part of the species belonging to the family, will remain practically untouched. Although Signoret does not adopt genera, yet he throws the inclusive genus *Tettigonia* into groups and series which are very uneven and more confusing than Stål's genera.

I have not followed Stål in giving a dichotomous table of the group, as it appears to me impossible to draw up one that is of any practical use: the characters are transitional and it is only by taking a number of them together that any division at all can be made.

DIESTOSTEMMA.

Diestostemma, Amyot et Serville, Hist. Nat. des Ins. Hémipt. p. 572 (1843).

The members of this genus appear to be widely distributed in Central and South America; they are conspicuous insects, resembling white moths. The head is very considerably produced in a blunt triangle, and the ocelli are much nearer to the eyes than is usual in the Tettigoniidæ; it is furnished in front, in one species at least, with a long snout-like appendage, which fits on to a small peduncle—the use of this is not apparent as it is very easily shed, one specimen only in our collection possessing it.

Signoret notices this structure (Ann. Soc. Ent. Fr. 1855, p. 526), but apparently he had not seen an example furnished with it: it is probable that every member of the genus possesses the appendage at some period or other of its existence, as a circular cicatrix or small peduncle, as observed by Signoret, is always present at the apex of the head; in some specimens, however, the character is much more conspicuous than in others.

1. **Diestostemma albipenne.**

Cicada albipennis, Fabr. Syst. Rhyng. p. 62 (1803) [1].
Diestostemma albipenne, Amyot et Serv. Hist. Nat. des Ins. Hémipt. p. 572 [2].
Diestostemma albipennis, Walk. List of Homopt. Ins. iii. p. 798 [3].
Tettigonia albipennis, Sign. Ann. Soc. Ent. Fr. 1855, p. 526 [4].

Hab. GUATEMALA, Cerro Zunil 4000–5000 feet, Las Mercedes 3000 feet (*Champion*); PANAMA, Bugaba, David, Volcan de Chiriqui 2000–3000 feet, Tolé (*Champion*), Chiriqui (*Mus. Holm.*).—SOUTH AMERICA [1], Pará [3], Brazil [2 3 4].

I have retained Amyot and Serville's name "*albipenne*" as they give the derivation of their generic name and show that it is of the neuter gender; Walker was in error in altering the name to "*albipennis.*"

2. **Diestostemma nigropunctatum.**

Tettigonia nigropunctata, Sign. Ann. Soc. Ent. Fr. 1855, p. 527 [1].

Hab. MEXICO [1] (*Mus. Vind. Cæs.*).

This species differs from the preceding in being more elongate and slender, with the head longer and smoother, and the forehead more flattened; the pronotum is less convex and the humeral angles are somewhat differently shaped. Signoret appears to be doubtful as to its right to be regarded as a separate species, but it certainly seems distinct.

3. **Diestostemma rugicolle.** (Tab. XIII. figg. 1, 1*a*.)

Tettigonia nigricollis, Sign. Ann. Soc. Ent. Fr. 1855, p. 525, t. 21. fig. 18 [1].

Hab. MEXICO (*Sallé* [1]), Atoyac in Vera Cruz (*Schumann, H. H. Smith*), Misantla (*F. D. Godman*), Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, Belize (*Blancaneaux*).

This species may easily be distinguished from *D. albipenne* by the much more pronounced side-angles of the pronotum, and the large yellowish rugosities on its disc; the appendage of the head is cultriform and flattened at the sides, and it is about as long as the head and pronotum together.

We figure a specimen from Atoyac and the side of the head of an example from Misantla.

AMBLYDISCA.

Amblydisca, Stål, Kongl. Sv. Vet.-Ak. Handl. Band viii. 1 (Hemipt. Fabr. ii.), p. 61, nota (1869).

In this genus the pronotum is narrowed in front, the head has the vertex strongly impressed, and the metopidium is flat or slightly depressed; the chief character, however, lies in the clypeus, which is strongly raised and, when viewed from the side, forms almost a right angle; the depressed metopidium and the part of the clypeus above the angle lie in nearly the same plane. The characters of the front part of the head are much the same as those on which Amyot and Serville founded the genus *Sphenorrhina*; but the head varies so much in shape in different species belonging to the last-named genus, and so many intermediate forms occur, that it is impossible to draw a hard-and-fast line between *Sphenorrhina* and its allied genera, whereas the characters of *Amblydisca* appear to be distinct and constant. I have no hesitation, therefore, in adopting Stål's genus, which he used for the reception of *Tettigonia* (*Aulacizes*) *rubriventris*, Sign., and three species described by himself under *Aulacizes*.

1. **Amblydisca salvini,** sp. n. (Tab. XIII. figg. 2, 2 *a*.)

Fusco-castanea, antice flavo-maculata, tegminibus olivaceo-virescentibus marmoratis, maculis quatuor flavis; vertice brevi, apice late rotundato, impressione profundâ flavâ; metopidio depresso, ad medium unimaculatâ; pronoto transversim rugoso, quinquemaculato, lateribus antice sensim angustatis; scutello maculâ rotundatâ; tegminibus ad apicem subhyalinis, remotius punctatis; pedibus et pectore rufo-castaneis; abdomine fusco; alis fusco-purpureis.

A large species; front parts of a deep purplish-castaneous colour, with a round depression on the vertex, and with two spots on each side of the head and a central spot on the metopidium orange-yellow; vertex very short, slightly and broadly rounded, almost subtruncate; eyes prominent; pronotum considerably broader than long, rugose, with an almost smooth transverse impression in front, and with a yellow spot in front and four others almost in a line about the middle; scutellum smooth in front, finely rugose behind, with a round yellow spot on its anterior portion; tegmina olive-green, variegated with yellowish-green and mottled with castaneous, presenting a marbled appearance; at the base near the shoulders are two yellow spots, one on each tegmen, and there are also two or three others at the sides of the sternum near these; the apex of the tegmina is subhyaline and is furnished with a yellow spot, which is more or less irregular and often broken into two or three; the underside and legs are reddish castaneous, the abdomen being fuscous.

Long. 18 millim.; lat. ad hum. 5 millim.

Hab. PANAMA, Caldera, Bugaba, Volcan de Chiriqui 2500–4000 feet (*Champion*), Chiriqui (*Mus. Holm.*).

This is the finest species of Tettigoniidæ in our collection, and I have also found a single example of it among some unnamed material belonging to the Stockholm Museum. A specimen from Bugaba is figured.

2. **Amblydisca rubriventris.** (Tab. XIII. figg. 3, 3 *a*.)

Tettigonia rubriventris, Sign. Ann. Soc. Ent. Fr. 1855, p. 52, t. 6. fig. 5 [1].

Aulacizes stellaris, Walk. List of Homopt. Ins., Suppl. p. 238 (1858) [2].

Hab. Mexico [1] (*Sallé* [2]; *Bilimek, in Mus. Vind. Cæs.*), Jalapa (*M. Trujillo*); Guatemala, Sabo in Vera Paz, El Tumbador 3000 feet, Cerro Zunil 4000–5000 feet, Capetillo (*Champion*).

A specimen from Sabo, Vera Paz, is figured.

3. **Amblydisca nitidipennis.**

Aulacizes nitidipennis, Stål, Stett. ent. Zeit. xxv. p. 79 (1864) [1].

Hab. Mexico (*Mus. Holm.* [1]).

4. **Amblydisca bugabensis,** sp. n. (Tab. XIII. figg. 4, 4 *a*.)

Fusca vel fusco-rufa; vertice brevi, subtriangulari, fortiter impresso; metopidio depresso, maculâ magnâ ad medium et parte ante clypeum rufo-flavâ; pronoto postice transversim rugoso, maculâ utrinque ad medium; scutello postice rufo-flavo; tegminibus sat lævibus, subnitidis, vittis quibusdam irregularibus rufo-flavescentibus plus minusve distincte instructis; pectore antico ad latera albo-piloso; abdomine pedibusque fusco-rufis.

A fuscous or dark reddish-fuscous species, with a central spot on the metopidium, the parts above the clypeus, two distinct and constant spots on the pronotum, part of the scutellum, and more or less irregular thin bands on the tegmina reddish-yellow; vertex short, rounded in front, subtriangular; metopidium depressed; pronotum with the sides almost parallel; tegmina smooth and rather shiny, with fine scattered punctures, in some lights with a strong bluish or purplish reflection, which is apparently a common characteristic of several allied species; abdomen and legs lighter or darker fuscous-red.

Long. 14 millim.; lat. ad hum. $4\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

This species is closely allied to *A. nitidipennis*, and may possibly be a variety of it; but the two constant round spots on the pronotum and the absence of scattered minute spots on the tegmina will serve to distinguish it.

5. **Amblydisca lugubris,** sp. n.

Præcedenti affinis, sed vertice paullo longiori; capite, pronoto et scutello immaculatis, castaneis; tegminibus brevioribus, fuscis, castaneo obscure variegatis; pedibus et corpore subtus fusco-rufis.

Allied to the preceding species (*A. bugabensis*), but with the vertex a little longer and the tegmina shorter, and without any definite spots or markings; the front parts are castaneous, and the tegmina are dark, with a strong bluish reflection, and are obscurely mottled, especially in front and behind, with castaneous.

Long. $11\frac{1}{2}$ millim.; lat. ad hum. $4\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

6. **Amblydisca postfumata,** sp. n. (Tab. XIII. figg. 5, 5 *a*.)

Fusca vel fusco-castanea; vertice brevi, subtriangulari; metopidio depresso, maculâ ad medium et parte supra clypeum flavis; pronoto immaculato, leviter rugoso, antice vix angustato; scutello nigro, postice flavescenti; tegminibus fere lævibus, fusco-flavescentibus, subhyalinis, apice late fumato, nigrescenti; pedibus et corpore subtus fusco-rufis.

Fuscous, with the part just above the clypeus, a central spot on the metopidium, and more or less of the scutellum towards the apex yellow, and the tegmina of a fuscous-yellowish colour, semi-transparent, darker towards the base, and with the apex broadly fuscous as if smoked; the pronotum has the sides

very slightly converging in front, and is finely rugose, and the tegmina are almost smooth, being very remotely and finely punctured; legs reddish.

Long. 14–15 millim.; lat. ad hum. 4½ millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A fair series. This is a very distinct species, but some of the specimens appear to lose their colour and become almost entirely fuscous and opaque, and in this state might easily pass unrecognized.

7. **Amblydisca fluctuosa,** sp. n. (Tab. XIII. figg. 6, 6 *a*.)

Angustior, fusca, cærulescens, maculis rufis variantibus sparsa; vertice brevi, subtriangulari, rotundato; capite cum pectore fusco-testaceo, ad partem rufo; pronoto subparallelo, subrugoso, maculis duabus rufis instructo; scutello postice rufo; tegminibus fere lævibus, rufo-maculatis; pedibus testaceis; abdomine læte rufescenti; variat maculis testaceis.

Narrower than the preceding species (*A. postfumata*), fuscous, with a very strong blue reflection in certain lights; vertex, metopidium, and chest testaceous, the clypeus being orange, and the part just above it and a central spot on the metopidium red or orange; pronotum rugose behind, subparallel; clypeus with a large red spot at the apex; tegmina scarcely punctured, narrowed towards the apex, with red spots of varying sizes arranged more or less in rows, some being very minute, while of the larger ones three or four more or less distinct transverse rows can be traced across the closed tegmina; legs testaceous; abdomen of a bright red colour.

Long. 11–12 millim.; lat. ad hum. 3–4 millim.

Hab. PANAMA, Caldera, Tolé (*Champion*).

This is a very distinct and pretty species; certain forms of *Aulacizes* resemble it, but the short head and the shape of the clypeus will easily distinguish it from these. The single specimen from Tolé is shorter and smaller, and has testaceous instead of red markings; this, however, is a common character in certain species of the group. A specimen from Caldera is figured.

8. **Amblydisca tapes,** sp. n. (Tab. XIII. figg. 7, 7 *a*.)

Elongata, sat angusta, brunnea vel fusca, testaceo flavoque variegata; vertice subtriangulari; metopidio longitudinaliter impresso, impressione testaceâ marginibus fuscis; antennis prælongis; pronoto transversim rugoso, fusco, maculis novem testaceis vel flavis, lateribus antice sensim angustatis; scutello variegato; tegminibus maculis flavo-rufescentibus dense sparsis, duabus vel tribus ad basim, ad medium et ante apicem præcipue conspicuis; abdomine fusco-testaceo vel fusco; pedibus testaceis, tarsis tibiisque ad partem fuscatis.

Of a fuscous or dark testaceous-brown colour, variegated with testaceous and reddish-yellow; vertex subtriangular, moderately produced; metopidium with the depressed part narrower than in the preceding species (*A. fluctuosa*), testaceous, bounded with fuscous, and beyond this again testaceous; pronotum distinctly but gently narrowed in front, with nine testaceous or yellow spots; scutellum large; tegmina scarcely punctured, usually rather shiny, with a large number of reddish-yellow spots, some considerably larger than others—the most conspicuous are two more or less ocellate spots towards the apex, behind which come several irregular longitudinal confluent spots, forming in all a broad border to the apex of the tegmina; legs testaceous, with the tarsi and apex of the tibiæ fuscous.

Long. 13–14 millim.; lat. max. 3½ millim.

Hab. MEXICO (*Sallé; Mus. Brit.*); GUATEMALA, Sabo in Vera Paz (*Champion*).

We figure a specimen from Sabo.

9. **Amblydisca aulæata,** sp. n. (Tab. XIII. figg. 8, 8 *a*.)

Præcedenti affinis, sed depressione metopidii totâ fusca, pronoto maculis decem vel duodecim, lateribus magis parallelis ante apicem substrangulatis, et maculis tegminum aliter dispositis facile distinguenda.

In form resembling the preceding species (*A. tapes*), but slightly larger, with the sides of the pronotum more parallel, and the usual anterior depression continued deeply to the sides in front, giving a slightly strangulate appearance; pronotum with more testaceous spots; scutellum broadly testaceous behind; tegmina castaneous, with a large number of irregular light testaceous markings, of which the most conspicuous are perhaps an irregular row of spots on the edge; underside and legs light testaceous, the tarsi more or less infuscate.

Long. 14–15 millim.; lat. ad hum. 4 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*), Chiriqui (*Mus. Holm.*).

This and the preceding species appear to represent a common type of coloration among the insects belonging to the present division of the Tettigoniidæ; *A. aulæata* is difficult to describe, but it may be easily recognized from the figures. There are several allied forms from Brazil in the British Museum.

A specimen from Chontales is figured.

10. **Amblydisca multiguttata.**

Aulacizes multiguttata, Stål, Stett. ent. Zeit. xxv. p. 80 (1864) [1].

Hab. MEXICO [1] (*Mus. Holm.; Mus. Vind. Cæs.*).

In the Vienna Museum there is an *Amblydisca* labelled "*multimaculata,* det. Stål," which must apparently be referred to this species. It is not represented in our collection, and I have not seen Stål's type.

11. **Amblydisca coriacea.**

Aulacizes coriacea, Stål, Stett. ent. Zeit. xxv. p. 80 (1864) [1].

Hab. MEXICO [1] (*Mus. Holm.; Mus. Vind. Cæs.*); GUATEMALA, San Juan in Vera Paz (*Champion*).

The single specimen in our collection is unicolorous, without spots, whereas the typical example has the tegmina irrorated with small white spots and furnished with a few larger ones. *A. coriacea* may easily be known by the head being considerably produced in an equilateral triangle, and by the raised reticulation of the elytra.

12. **Amblydisca gigas,** sp. n. (Tab. XIII. figg. 9, 9 *a*.)

Major, fusco-castanea, antice rufo-castanea, sat nitida; vertice valde producto triangulari, lævi; metopidio plano; pronoto sat longo, fortiter rugoso-punctato, lateribus antice leviter sensim angustatis; scutello ad medium depresso; tegminibus ad basim punctatis, deinde subrugosis, ad apicem lævibus; abdomine fusco; pedibus testaceis vel rufo-testaceis, tarsis genibusque nigris.

A very large and conspicuous, castaneous species, with the vertex much produced in a large, almost isosceles triangle, and smooth and shining; pronotum with the sides slightly but plainly narrowed in front, strongly and rugosely punctured; scutellum large, impressed and apparently divided in the middle; tegmina

strongly punctured at the base, and smooth and shining at the apex, with the part between dotted with small rugosities, which, for the most part, proceed as short irregular lines from the strongly raised veins; abdomen pitchy; legs variegated with reddish and yellowish-testaceous, the tarsi, knees, and femora pitchy.

Long. ad apicem abdominis 24, ad apicem tegminum 19 millim.; lat. ad hum. 5 millim.

Hab. Costa Rica (*Sallé*).

I feel considerable hesitation in retaining this and the preceding species under *Amblydisca*, but it is best, in the present state of our knowledge, not to multiply the genera of the group without very good reason; if we are to go by the shape of the clypeus they fall under *Amblydisca*, if by the formation of the vertex they may well be separated from it. A transition, however, is afforded by *A. multiguttata*.

ACROBELUS.

Acrobelus, Stål, Kongl. Svensk. Vet.-Ak. Handl. Band viii. 1 (Hemipt. Fabr. ii.), p. 60, nota (1869).

This genus was formed by Stål to receive *Tettigonia reflexa*, Sign., which appears to be synonymous with *Rhaphirhinus attenuatus*, Walk.; it may be distinguished from *Raphirhinus*, Lap. (*Rhaphidorhinus*, Stål), by the head being gradually prolonged into a stout recurved process, which is excavate above and below, whereas in the last-named genus (which is represented by *R. phosphoreus* and *Tettigonia rugosa*) the process is slender and not excavate above, and proceeds abruptly from the head, the apex of which is much broader than the process.

1. **Acrobelus attenuatus.**

Rhaphirhinus attenuatus, Walk. List of Homopt. Ins. iii. p. 806 (1851) [1].

Tettigonia reflexa, Sign. Ann. Soc. Ent. Fr. 1855, p. 524, t. 21. fig. 15 [2].

Hab. Panama, Bugaba (*Champion*).—West Coast of America (*Mus. Brit.* [1 2]).

CATORTHORRHINUS, gen. nov.

Aulacizi similis, sed vertice declivi in processum brevem erectum producto, hoc supra subtusque profunde excavato; metopidio a latere viso ut in *Amblydisca* angulato; oculis fortiter prominentibus; pronoto antice vix angustato, subparallelo, rugose punctato, ante scutellum leviter sinuato; tegminibus parallelis.

Allied to *Aulacizes*, which it closely resembles, except that the vertex of the head slopes upwards from the eyes and is continued into a short upright process, which is excavate above and below, the excavation being continued on the metopidium; the metopidium, viewed from the side, forms a small angle, as in *Amblydisca*; the pronotum is scarcely narrower in front than behind, rugosely punctured, and only slightly sinuate before the scutellum; tegmina parallel; anterior tibiæ not excavate.

1. **Catorthorrhinus resimus,** sp. n. (Tab. XIII. figg. 10, 10 *a*.)

Testaceus, capite pronotoque unicoloribus; scutello testaceo, levissime sculpturato; tegminibus flavo-testaceis plus minusve distincte fulvo-notatis, apice griseo, subhyalino; corpore subtus antice testaceo, abdomine subtus albido; pedibus testaceis vel fusco-testaceis.

Of a testaceous colour, with the abdomen underneath whitish, and the tegmina yellowish-testaceous, with more

or less distinct, variable, fuscous, longitudinal bands, the most distinct being an oblique band reaching from near the base to the suture about a third from the apex, where it takes a turn and joins the exterior margin, the part behind being fuscous and subhyaline; sides of the breast and abdomen whitish; legs testaceous or fusco-testaceous.

Long. 12–13 millim.; lat. ad hum. 3–3$\frac{1}{8}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Our single example from Bugaba has the fuscous markings of the tegmina very different from what they are in the specimens from the Volcan de Chiriqui, and they are continued nearly to the apex; the process of the head, too, is scarcely so upright.

A specimen from the Volcan de Chiriqui is figured.

BASCARRHINUS, gen. nov.

Elongatus, postice latior, capite maximo subtus excavato; metopidio inter oculos angusto, in processum longum subtus profunde excavato, supra et ad latera canaliculatum ad apicem nonnihil dilatatum producto; oculis parvis; pronoto magno, subrugoso, lateribus postice dilatatis, basi sinuatâ, angulis posticis late rotundatis; scutello magno; tegminibus ad apicem sensim dilatatis, remotius punctatis, venis leviter exstantibus; tibiis excavatis.

Elongate, with the head very large, subparallel before the eyes, which are small and then contracted in an obtuse angle to the apex, from which there extends a long process, which is gradually dilated in front; the underside of the head and process are excavate, and the upperside of both is traversed by a channel, the sides also of the process being channelled; pronotum with the sides raised and dilated behind, sinuate at the base, the posterior angles broadly rounded; scutellum large; tegmina gradually widened towards the apex, with remote and rather large, but not deep, punctuation, the veins prominent; tibiæ excavate on their outer margin.

This is a very distinct genus, and may at once be known from *Rhaphirhinus*, apart from the general structure, by having the process of the head in the same plane with the vertex, and not recurved, except almost imperceptibly at the extreme tip.

1. **Bascarrhinus platypoides,** sp. n. (Tab. XIII. fig. 11.)

Fuscus, vertice obscure testaceo, capite subtus flavo-testaceo, processu et spatio ad basim hujus subtus nigro; scutello testaceo variegato; tegminibus fuscis, subhyalinis, venis obscure rufescentibus; corpore subtus testaceo; pedibus fuscis, femoribus posticis rufescentibus, anterioribus et intermediis testaceis.

Lighter or darker fuscous, with the vertex and sometimes part of the pronotum obscurely testaceous; underside of the rostrum and a space at the base dark, the rest of the underside of the head yellow-testaceous; at the base of the head and in the centre of the pronotum are two small, light, longitudinal, testaceous patches; scutellum dark, variegated with testaceous; tegmina subhyaline, with reddish veins; legs somewhat variable in colour—in the type specimen fuscous, with the femora lighter, the posterior pair rufescent; underside testaceous.

Long. 18, sine processu 15 millim.; lat. ad hum. 4 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

AULACIZES.

Aulacizes, Amyot et Serville, Hist. Nat. des Hémipt. p. 571 (1843).

The only characters given by Amyot and Serville to distinguish this genus from

Tettigonia are as follow:—"Head prolonged in a cone in front of the eyes, with a short, longitudinal, impressed furrow on the vertex." Its range is, however, considerably widened by Stål, and at present *Aulacizes* is taken as including a considerable number of species which have the underside of the head convex and gibbous, or very obtusely angled beneath, and the pronotum slightly narrowed in front and never constricted behind the anterior margin, so that the latter appears broader than the posterior margin, as in *Phera* and *Oncometopia*. The tibiæ are usually more or less plainly sulcate, but sometimes the groove is very indistinct, and the insects do not differ much as regards this character from *Tettigonia*; in these cases, however, the slight projection before the eyes is very distinct, and the head is produced and furrowed.

1. **Aulacizes mutans.** (Tab. XIII. fig. 12.)

Tettigonia mutans, Sign. Ann. Soc. Ent. Fr. 1855, p. 228, t. 12. fig. 3 [1].
Aulacizes mutans, Stål, Stett. ent. Zeit. xxv. p. 81 [2].
Proconia consistens, Walk. List of Homopt. Ins., Suppl. p. 226 (1858) [3].

Hab. Mexico [1 2] (*Sallé* [3], *in Mus. Brit.*; *Mus. Vind. Cæs.*; *Mus. Holm.*), San Marcos (*Bilimek, in Mus. Vind. Cæs.*), Jalapa (*M. Trujillo*), Tierra Colorada in Guerrero, Atoyac in Vera Cruz (*H. H. Smith*); Guatemala, San Gerónimo (*Champion*).

A specimen from Mexico is figured.

2. **Aulacizes piperata,** sp. n. (Tab. XIII. fig. 13.)

Robusta, fusca; capite testaceo, basi castaneâ; metopidio et vertice ad medium fuscis; oculis vix prominulis; pronoto castaneo albido-irrorato; tegminibus testaceis vel fusco-testaceis, albidis parvis maculis sat sparsim irroratis, apicibus hyalinis; abdomine supra nigro; corpore subtus et pedibus dilute testaceis.

A comparatively broad and robust species, with the vertex of the head not strongly produced and rounded; eyes only slightly prominent; pronotum light castaneous, with a number of small whitish-testaceous dashes and spots, which are also scattered more or less sparsely over the tegmina, the ground-colour of which is testaceous or fusco-testaceous; before the apex of the tegmina, which is hyaline, there is a row of these spots; upperside of the abdomen black, the underside and legs testaceous.

Long. 11–12 millim.; lat. ad hum. 4–4½ millim.

Hab. Mexico, Xucumanatlan, Amula, and Omilteme in Guerrero 6000–8000 feet (*H. H. Smith*).

In our collection there is also a specimen from Purula, Vera Paz (*Champion*), which may be an unspotted variety of this species.

An example from Xucumanatlan is figured.

In many of the Tettigoniidæ the colour of the upperside of the abdomen is variable, being sometimes black and sometimes red in different specimens of the same species. The tegmina are very often subhyaline, but they appear to be of an entirely different colour when closed and when opened—in the present species when closed they are dark

fuscous, when opened they are castaneous or even light testaceous: this naturally causes considerable confusion in descriptions, which are usually made from examples with closed tegmina.

3. **Aulacizes figurata,** sp. n. (Tab. XIII. fig. 14.)

Præcedenti similis, capite pronotoque flavo-testaceis vel albidis vel rufis, nigro- aut fusco-testaceis variegatis, illo vertice leviter producto obtuse rotundato, hoc rugose punctato, basi fuscâ; scutello figurato; tegminibus brunneis vel fuscis, maculis quibusdam parvis albidis nigro-cinctis nonnunquam indistinctis notatis, apice vix hyalino; abdomine supra toto nigro vel rufo aut testaceo ad medium nigro; corpore subtus pedibusque dilute testaceis vel rufis.

Very like the preceding (*A. piperata*) in general appearance, but easily distinguishable by the constant pattern of the head and pronotum, the ground-colour of which is yellowish, testaceous-whitish, or red, with markings of the same or darker colour surrounded by dark lines; the pronotal markings extend almost to the base, where they are terminated by a very irregular black line, the base behind this being fuscous; scutellum variegated; tegmina brown or fuscous (sometimes light brown), plainly pubescent, finely but distinctly sculptured, with a number of small, irregular, whitish spots surrounded with black; in some specimens they are scarcely visible, but where well marked the chief group forms an oblique line, starting from behind the scutellum, on each of the tegmina; the apex is concolorous with the rest of the tegmina; upperside of the abdomen black, or red, or testaceous, with the central portion black; underside and legs testaceous or reddish, the femora sometimes variegated with fuscous.

Long. 12 millim.; lat. ad hum. 4 millim.

Hab. MEXICO, Ventanas in Durango (*Forrer*), Cuernavaca in Morelos (*H. H. Smith; Bilimek, in Mus. Vind. Cæs.*), Chilpancingo, Tepetlapa, and Venta de Zopilote in Guerrero (*H. H. Smith*); GUATEMALA (*Mus. Holm.*).

There are also two specimens of this species in the Brussels Museum, without definite locality.

We figure an example from Cuernavaca.

4. **Aulacizes invidenda,** sp. n. (Tab. XIII. fig. 15.)

Præcedenti affinis, rufa vel testacea, capite pronotoque plus minusve nigro-variegato, hoc leviter ante oculos producto, obtuse rotundato, oculis prominulis, illo rugoso; scutello fusco, maculis duabus notato; tegminibus fuscis vel nigro-fuscis, rufo- vel testaceo-maculatis, apice subhyalino; pedibus et corpore subtus cum colore macularum congruentibus.

Allied to the preceding species (*A. figurata*), but rather larger; head and pronotum red or testaceous, variegated more or less distinctly with black; vertex short, obtusely rounded; pronotum rugosely punctured; scutellum dark, with two light spots; tegmina dark, often with a bluish reflection, with large, somewhat variable, red or testaceous spots, the chief group of which usually form a confluent oblique band on each tegmen behind the scutellum; legs red or yellow, according to the colour of the markings of the upperside.

Long. 13–14 millim.; lat. ad hum. $4\frac{1}{2}$ millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Teleman in Vera Paz, San Isidro, Zapote (*Champion*).

The specimen from San Isidro differs somewhat from the rest, but can hardly be referred to a separate species. An example from Teleman is figured.

5. **Aulacizes albidipennis,** sp. n. (Tab. XIII. fig. 16.)

Præcedentibus affinis, robusta, testacea; capite lato obtuse producto, hoc et pronoto albido colore obscuriori figuratis, rugosis; scutello testaceo, nigro-notato; tegminibus albidis, margine exteriori et apice testaceis, maculis quibusdam tenuibus fuscis; corpore rufo-testaceo; femoribus testaceis, ad apicem fusco-annulatis; tibiis tarsisque nigris, his ad partem et genibus testaceis.

A rather broad and robust species, with the head shortly and bluntly produced; head and pronotum whitish, variegated with fuscous and testaceous; scutellum testaceous, with two minute dark rings in front and the apex fuscous; tegmina whitish, with the external border and apex testaceous, and with dots and dashes of a dark colour, which also narrowly border the internal margin; abdomen with a fuscous spot towards the apex; legs testaceous, the tibiæ and part of the tarsi and a ring before the knees fuscous.

Long. 12 millim.; lat. ad hum. 4 millim.

Hab. MEXICO, Tierra Colorada in Guerrero 2000 feet (*H. H. Smith*).

6. **Aulacizes isabellina,** sp. n.

Elongata, sat angusta, isabellina; capite parvo, vertice brevi, ante oculos late quadratim rotundato, cum pronoto et scutello fusco perobscure rufo; pronoto antice distincte angustato, fere lævi, basi ad medium haud sinuatâ; scutello magno; tegminibus fusco-griseis, subhyalinis, utrinque pone scutellum fasciâ longitudinali perobscure rufâ instructis, sat nitidis, lævibus, postice sensim angustatis; corpore subtus obscure rufo; pedibus fuscis.

An obscure-looking species, of a dark dun colour, with the front parts, the underside, and a longitudinal fascia towards the base of the tegmina obscurely crimson; head small, with short squarely rounded vertex; pronotum plainly narrowed in front, not sinuate at the base, almost smooth; scutellum large, depressed in the middle; tegmina rather shiny, almost smooth; legs fuscous.

Long. 13½ millim.; lat. ad hum. 4 millim.

Hab. GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

A. isabellina appears to form a connecting-link between the preceding species (with short, broad, obtuse heads) and the following, in which the head is more strongly produced.

7. **Aulacizes affinis.**

Aulacizes maculata, Walk. List of Homopt. Ins. iii. p. 793 (1851)[1].
Aulacizes terminalis, Walk. loc. cit.[2].
Tettigonia affinis, Sign. Ann. Soc. Ent. Fr. 1855, p. 227[3].

Hab. MEXICO (*Sichel, in Mus. Vind. Cæs.*).—BRAZIL[2], Bahia[3].

The above is Signoret's synonymy, and I am somewhat doubtful of it; if he is right, Walker's name *A. maculata* ought to stand. Signoret, however, appears to have named his insect afresh, as Walker had a nearly allied species, *Ciccus maculatus*, and also a *Diestostemma terminalis*, and as the first-mentioned author included all under *Tettigonia*, it was impossible for him to let the synonyms stand; as it is, much confusion is avoided by adopting Signoret's name.

8. **Aulacizes sparsa,** sp. n. (Tab. XIII. fig. 17.)

A. piperatæ similis, sed major, vertice magis producto, triangulari, et corpore supra multo densius maculis parvis asperso, facile distinguendus; capite nigro, maculis parvis testaceis; metopidio testaceo, nigro-variegato; pronoto rugose punctato, basi ante scutellum leviter sinuatâ, hoc et tegminibus dense flavo-testaceo aspersis; scutello nigro, maculâ magnâ ad basim flavescenti; tegminibus ad apicem haud hyalinis; corpore subtus dilute testaceo, abdomine ad medium nigro; pedibus testaceis.

Larger than *A. piperata*, which it resembles, and easily distinguished by its triangular head, the denser and larger testaceous markings, which cover the whole upper surface, the large yellow spot on the scutellum, and the opaque apex of the elytra; the markings on the pronotum, which is rugosely punctured, are more or less confluent, and the apex and extreme base are darker than the central portion; the general colour is a rich castaneous brown, the underside (with the exception of a black line down the centre of the abdomen) and the legs being light testaceous.

Long. 13 millim.; lat. ad hum. 4 millim.

Hab. GUATEMALA (*Mus. Holm.*).

A single female of this very distinct species was sent to me by Dr. Aurivillius among some unnamed insects belonging to the Stockholm Museum.

9. **Aulacizes pollinosa,** sp. n. (Tab. XIII. fig. 18.)

Præcedenti affinis, sed angustior et magis parallela, capite longiori, oculisque minus prominulis, corpore supra multo densius maculis minutis testaceis irrorato.

Allied to the preceding (*A. sparsa*), but narrower and much duller, with the head larger and more pointed, and the eyes less prominent; pronotum less rugose; upper surface much more thickly sprinkled with minute whitish or testaceous spots, which are more separated on the pronotum; apex of the scutellum testaceous; metopidium mostly yellow; chest and abdomen darker in the centre, lighter at the sides; legs reddish, the femora variegated with testaceous.

Long. 13 millim.; lat. ad hum. $3\frac{1}{2}$ millim.

Hab. MEXICO (*Bilimek, in Mus. Vind. Cæs.*).

A specimen of this species has been sent to me from the Vienna Museum collection as *Tettigonia irrorata* (Fabr.) (Ent. Syst. iv. p. 33; Sign. Ann. Soc. Ent. Fr. 1855, p. 59, t. 6. fig. 14 = *Aulacizes rufiventris*, Walk. List of Homopt. Ins. iii. p. 796), which is a common Brazilian insect; but it differs from a typical example of Signoret sent with it in the shape of the head and eyes, narrower form, and different coloration, and is, I think, without doubt distinct.

10. **Aulacizes aurantiaca.** (Tab. XIII. fig. 19.)

Tettigonia aurantiaca, Sign. Ann. Soc. Ent. Fr. 1855, p. 225, t. 6. fig. 17 [1].
Aulacizes aurantiaca, Stål, Stett. ent. Zeit. xxv. p. 79 [2].
Ciccus ochraceus, Walk. List of Homopt. Ins., Suppl. p. 244 (1858) [3].

Hab. MEXICO [1] [2] (*Sallé, in Mus. Brit.*[3]; *Mus. Vind. Cæs.*); GUATEMALA, San Gerónimo (*Champion*).

The type-form of this species is of a deep orange-red colour. The single specimen in our collection, from Guatemala, and from which our figure is taken, is yellow, and

is somewhat broader in form; but it appears to be too closely allied to be described as a distinct species, at any rate upon a single example.

11. **Aulacizes thunbergi.** (Tab. XIII. fig. 20.)

Aulacizes thunbergii, Stål, Stett. ent. Zeit. xxv. p. 79 (1864)[1].

Hab. Mexico, Vera Cruz (*Mus. Holm.*[1]), Atoyac in Vera Cruz (*Schumann*), Jalapa (*Bilimek, in Mus. Vind. Cæs.*), Chiapas (*M. Trujillo*), Valladolid in Yucatan (*Gaumer*); Guatemala, Lanquin, San Juan, Chiacam, Balheu, and San Gerónimo in Vera Paz (*Champion*); Nicaragua, Chontales (*Janson*).

This species varies considerably in coloration. It is a somewhat elongate insect, with the head considerably produced, of a dark colour, with a number of large variable and more or less confluent spots, which are either bright crimson, scarlet, or yellow; these are sometimes much reduced, but often form the greater part of the ground-colour.

It would be quite impossible to recognize the example belonging to the Vienna Museum, which I have before me, and which was presented by Stål himself, by means of his description above referred to[1].

An example from Chiacam is figured.

12. **Aulacizes amblardi.**

Tettigonia amblardii, Sign. Ann. Soc. Ent. Fr. 1855, p. 53, t. 6. fig. 7[1].

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).—Bolivia (*Mus. Vind. Cæs.*[1]).

13. **Aulacizes panamensis,** sp. n. (Tab. XIII. fig. 21.)

Elongata, parallela, capite pronotoque griseo-testaceis vel flavo-testaceis, illo vertice sat producto, maculis quatuor parvis nigris, ad medium sulcato, hoc leviter rugoso, maculis quatuor ad apicem lineatim dispositis, et margine basali, nigris; scutello fusco; tegminibus lævibus, testaceis vel brunneis vel griseo-brunneis, subhyalinis, perobscure vittatis; corpore supra fusco vel fusco-rufescenti, subtus testaceo; pedibus dilute testaceis.

Elongate, parallel, with the head and pronotum greyish or yellowish-testaceous; vertex with two small black markings at the apex and two at the base, the former occasionally absent, and with a deep short furrow in the centre; pronotum with the base dark and with four constant small black spots arranged longitudinally just before the apical border, finely rugose longitudinally; scutellum large, shining, fuscous; tegmina smooth, semitransparent, somewhat variable in colour, with more or less distinct lines of darker bands, which are often scarcely traceable, the apex and the suture broadly before the apex more or less conspicuously darker than the ground-colour; upperside of the abdomen more or less dusky, the underside and legs light testaceous.

Long. 14–15 millim.; lat. ad hum. 3–3½ millim.

Hab. Panama, Bugaba, Caldera, and Volcan de Chiriqui (*Champion*).

This species is rather closely allied to *A. amblardi*, but may easily be known by the longer and narrower head, and by the shape of the metopidium, which is convex and rounded for some distance, and then terminates in a very blunt angle. It might,

perhaps, be placed under the genus *Amblydisca*, but its general affinities appear to be much more towards *Aulacizes*.

A specimen from Bugaba is figured.

14. **Aulacizes confusa.**

Tettigonia confusa, Sign. Ann. Soc. Ent. Fr. 1855, p. 58, t. 6. fig. 12 [1].

Hab. Mexico [1] (*Mus. Vind. Cæs.*).

This species is not represented in our collection; it is allied to *A. amblardi*, but is broader and has the head shorter and more truncate, besides being differently coloured.

15. **Aulacizes insignior,** sp. n. (Tab. XIII. fig. 22.)

Major, lata, fusca, rufo-variegata; vertice elongato, lato, obtuse rotundato, impresso, oculis prominulis; pronoto antice distincte angustato, fortiter rugose punctato, basi fortiter sinuatâ, utrinque ad medium impresso, fusco-testaceo, indistincte rufo-variegato; scutello magno fuscato; tegminibus distincte punctatis, ad apicem reticulatis, fuscis, irregulariter rufo-vittatis; pedibus fuscis.

A large and conspicuous species; head long, the underside flatly horizontal, if viewed from the side; vertex long, produced in a large triangle, with the apex bluntly rounded, impressed in front and broadly sulcate behind; eyes prominent; pronotum distinctly narrowed in front, strongly impressed in front and at the sides, rugosely punctured, deeply sinuate at the base; tegmina distinctly and closely, but not strongly, punctured, fuscous, with a broad irregular red band extending obliquely from the scutellum to the sides, and a second band extended across the surface at about a third before the apex, the apical third being fuscous, subhyaline, and reticulate; legs fuscous.

Long. 17 millim.; lat. ad hum. 5 millim.

Hab. Panama (*Boucard*).

I have described this species with some hesitation, as the type-specimen is a poor one and imperfect, but in size and structure and general appearance it differs greatly from the other members of the genus, and is easily recognizable; *A. insignior* may very probably have to be removed from *Aulacizes*.

PHERA.

Phera, Stål, Kongl. Svensk. Vet.-Ak. Handl. Band viii. no. 1 (Hemipt. Fabr. ii.), p. 60, nota (1869).

I have regarded this genus of Stål as including certain species which have the head produced in a more or less elongate triangle, the vertex plainly furrowed, and the pronotum with the sides quite parallel or, if anything, broader at the apex than at the base; the two veins of the clavus are sometimes distinct, but appear often to coalesce for the greater part of their length, and divide into a fork at each end.

1. **Phera wallengreni.**

Phera wallengreni, Stål, Stett. ent. Zeit. xxv. p. 78 (1864) [1].

Hab. Mexico [1] (*Mus. Holm. & Mus. Vind. Cæs.*).

I have only seen one example of this insect, which, apart from the characters of the head, appears to be closely related to certain species of *Aulacizes*. Stål compares it to *P. centrolineata*, Sign., to which, superficially, it seems to bear a very slight resemblance, being much broader and more robust.

2. **Phera atra.**

Proconia atra, Walk. List of Homopt. Ins. iii. p. 789 (1851) [1].
Tettigonia atra, Sign. Ann. Soc. Ent. Fr. 1854, p. 492, t. 17. fig. 9 [2].
Proconia contraria, Walk. loc. cit. p. 789 [3].

Hab. MEXICO (*Sallé, in Mus. Brit.* [2]), Valladolid in Yucatan (*Gaumer*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Teleman in Vera Paz (*Champion*); HONDURAS [2] (*Dyson* [1 3]); NICARAGUA, Chontales (*Janson*); PANAMA (*Boucard*), Volcan de Chiriqui (*Champion*).—GUIANA, Cayenne [2].

This is the largest species of the genus. The single specimen from Panama is a very large example, 20 millim. in length, and has the front of the head and the basal two-thirds of the pronotum red, and the legs clear red; it does not, however, appear to be anything more than a variety.

3. **Phera vitripennis.** (Tab. XIV. figg. 1, 1 *a*.)

Tettigonia vitripennis, Germ. Mag. der Ent. iv. p. 61 (1821) [1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 493, t. 17. fig. 10 [2].
Tettigonia coagulata, Say, Ins. Louisiana, p. 13 (New Harmony, 1832) [3]; Complete Writings, i. p. 307 [4].
Tettigonia ichthyocephala, Sign. Ann. Soc. Ent. Fr. 1854, p. 494, t. 17. fig. 11 [5].
Proconia admittens, Walk. List of Homopt. Ins., Suppl. p. 227 (1858) [6].
Proconia aurigena, Walk. loc. cit. p. 228 [7].

Hab. NORTH AMERICA, Louisiana [3 4], California [2].—MEXICO (*Sallé, in Mus. Brit.* [6]), Presidio de Mazatlan, Palmarito (*Forrer*), Jalisco (*Schumann*), Venta de Zopilote in Guerrero, Atoyac in Vera Cruz (*H. H. Smith*), Vera Cruz (*Mus. Brit.* [7]), Valladolid in Yucatan (*Gaumer*); NICARAGUA, Mosquito Coast [5].—BRAZIL [1].

I believe that the above synonymy will prove to be correct, as *T. vitripennis* is mentioned by Signoret [2] as a common species in Brazil and California, and therefore is sure to occur in Central America, and Walker's two species, as well as *T. ichthyocephala* (of which there are specimens from Mexico in Signoret's collection in the Vienna Museum), appear to agree well with the description and figure, allowing for the variation which appears to be present in many of the Tettigoniidæ. This variation in colour is very evident in a series in our collection from Presidio, Mexico. A specimen from Atoyac is figured.

4. **Phera nitida.**

Tettigonia nitida, Sign. Ann. Soc. Ent. Fr. 1855, p. 799, t. 24. fig. 20 [1].

Hab. GUATEMALA (*Mus. Paris* [1]).

I have not seen an example of this species, which apparently bears a superficial resemblance to the male of *P. centrolineata* and is not much larger than that insect; the head, however, is much blunted at the apex and less deeply furrowed, and the eyes are somewhat less prominent.

5. **Phera nigriceps.**

Tettigonia nigriceps, Sign. Ann. Soc. Ent. Fr. 1855, p. 508, t. 21. fig. 1 [1].

Hab. GUATEMALA (*coll. Signoret* [1], *in Mus. Vind. Cæs.*).

I have not seen a specimen of this insect, which, according to Signoret, is rather a small species (11 millim. in length) with clear hyaline tegmina, yellow thorax, and long black head, which is pointed and deeply sulcate.

6. **Phera insolita.** (Tab. XIV. figg. 2, 2 *a.*)

Proconia insolita, Walk. List of Homopt. Ins., Suppl. p. 227 (1858) [1].

Hab. MEXICO (*Sallé, in Mus. Brit.* [1]; *Boucard, in Mus. Holm.*), Ventanas in Durango (*Forrer*), Cuernavaca in Morelos (*H. H. Smith; Bilimek, in Mus. Vind. Cæs*), Tepetlapa, Omilteme, and Dos Arroyos in Guerrero (*H. H. Smith*).

I have had specimens of this species sent to me among undetermined material belonging to both the Vienna and Stockholm Museums. The general colour of the tegmina, when unfolded, is a tawny-reddish, with broad hyaline apex; the colour, however, appears to be to a certain extent variable, and the specimen from Dos Arroyos seems to be almost a black variety of the species.

We figure an example from Cuernavaca.

7. **Phera atrata,** sp. n. (Tab. XIV. fig. 3.)

Quoad formam et staturam *P. obtusifronti* affinis, nigra, nitidior; capite sat brevi, vertice obtuse producto fere æquilaterali, profunde sulcato; pronoto sat fortiter punctato, vix rugoso; scutello magno, ad medium punctato; tegminibus ad basim remotius punctatis, apicem versus lævibus; pectore et abdomine ad medium subtus infuscatis vel nigris; metopidio, lateribus corporis subtus et pedibus testaceis, tibiis anticis et tarsis superne nigris.

Black, somewhat shining, with the head rather short and broad, and the vertex obtusely produced in an equilateral triangle and deeply sulcate; pronotum rather strongly punctured, with the two impressions in front deep and pronounced; scutellum large, punctured in the centre, the basal angles broadly smooth; tegmina remotely punctured at the base, smooth towards the apex; central portion of the underside of the body dark, the sides, the metopidium, and the legs being testaceous; upperside of the anterior tibiæ and tarsi dark.

Long. 11 millim.; lat. ad hum. 3 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Several specimens. This species bears much the same relation to *P. aterrima* that *P. obtusifrons* bears to *P. luciola*.

8. **Phera luciola,** n. sp. (Tab. XIV. fig. 4.)

Tettigonia luciola, Sign. Ann. Soc. Ent. Fr. 1855, p. 239, t. 12. fig. 18 [1].
Ciccus lucicola (sic), Walk. List of Homopt. Ins., Suppl. p. 243 [2].

Hab. Mexico [2] (*coll. Signoret* [1], *in Mus. Vind. Cæs.*).

This species is allied to *P. centrolineata*, but may at once be known by its more elongate and narrower head.

9. **Phera tiarata.**

Phera tiarata, Stål, Stett. ent. Zeit. xxv. p. 79 (1864) [1].

Hab. Mexico, Vera Cruz (*Mus. Holm.* [1]).

This insect is intermediate between *P. luciola* and *P. centrolineata*. It is probable that *P. tiarata* is nothing more than a variety of the latter species, but as one example only has been seen I do not feel justified in sinking the name as a synonym. Stål himself speaks of it as "*P. centrolineatæ* maxime affinis, capite nonnihil longiore, magis acuminato, præsertim differt."

10. **Phera centrolineata.** (Tab. XIV. fig. 5.)

Tettigonia centrolineata, Sign. Ann. Soc. Ent. Fr. 1855, p. 239, t. 12. fig. 19[1].
Ciccus centrolineatus, Walk. List of Homopt. Ins., Suppl. p. 243 (♂) [2].
Ciccus nigrilux, Walk. loc. cit. p. 246 (♀) [3].

Hab. Mexico [1 2] (*Sallé, in Mus. Brit.* [3]; *Mus. Vind. Cæs.*; *Mus. Holm.*; *Mus. Roy. Belg.*), Tepetlapa and Chilpancingo in Guerrero, Teapa in Tabasco (*H. H. Smith*), Jalapa (*M. Trujillo*), Orizaba (*H. H. Smith & F. D. Godman*), Atoyac in Vera Cruz (*Schumann*), Oaxaca (*Mus. Brit.*).

The male is black, with a conspicuous white line on the vertex, whereas the female (*Ciccus nigrilux*, Walk.) has the centre of the pronotum broadly, and the scutellum, reddish or orange-red. I have examined a considerable number of specimens and find that the insect is invariably coloured as described when mature; occasionally in the female the whole head, pronotum, and scutellum are of a reddish-orange colour. The single example from Orizaba is a male, and is very light-coloured, but, so far as I can judge, this is due to immaturity.

A specimen from Chilpancingo is figured.

11. **Phera obtusifrons,** sp. n. (Tab. XIV. fig. 6.)

Præcedenti affinis, sed capite latiori, et breviori, et multo magis obtuse producto, facile distinguendus; capite supra flavo-rufescenti, subtus, parte anticâ et lateribus exceptis, nigro; pronoto ad medium scutelloque

flavo-rufescentibus, illo fortius rugose punctato; tegminibus hyalinis, maculis duabus ad marginem exteriorem, sæpe confluentibus, feminæ rufis vel fusco-rufescentibus, maris fuscis; corpore subtus ad medium nigrescenti, lateribus dilute testaceis.

Allied to the preceding (*P. centrolineata*), but easily distinguished by the shorter, broader, and much more obtuse head, which, viewed from the side, is much thicker and shows no inclination to become reflexed upwards; the sides and anterior margin of the metopidium are reddish-yellow, whereas in *P. centrolineata* they are black; the pronotum is more strongly and rugosely punctured than in the latter species; and the spots on the margin of the tegmina, instead of being black or fuscous, are of a dark crimson colour in the female; moreover, the male appears to be coloured like the female, with the exception of these spots, which are fuscous.

Long. 10–11½ millim.; lat. ad hum. 2–3 millim.

Hab. GUATEMALA, Cerro Zunil, Capetillo, San Gerónimo (*Champion*).

A specimen from San Gerónimo is figured.

12. **Phera aterrima.** (Tab. XIV. fig. 7.)

Parva, angusta, nigra, nitida; capite prælongo, acuminato, sulcato, sat lævi, oculis longis nonnihil prominulis; pronoto sat fortiter punctato vix rugoso; scutello magno, fere lævi; tegminibus ad basim fortiter punctatis, ceteris lævibus; corpore subtus testaceo, lateribus dilutioribus; pedibus piceo-testaceis.

A small, narrow, parallel species, with the upperside entirely deep black and rather shining; head very long, acuminate; eyes long and not very prominent; pronotum rather strongly punctured, but not, or scarcely, rugose; scutellum large, very finely rugose, almost smooth; tegmina strongly punctured at the base, smooth behind; underside testaceous, the sides light; legs pitchy-testaceous.

Long. 9 millim.; lat. ad hum. 2½ millim.

Hab. MEXICO, Tierra Colorada in Guerrero, 2000 feet (*H. H. Smith*).

This is quite distinct from any other species which I have seen.

13. **Phera obscurior,** sp. n.

Fusca, capite elongato, triangulari, reflexo, vertice impresso, antice et ad latera nigro testaceoque variegato; metopidio dilute testaceo; pronoto haud nitido, rugose sculpturato, antice et ad latera anguste testaceo; scutello obscure variegato; tegminibus nitidis, unicoloribus, venis clavi distinctis, parallelis; abdomine supra nigro; corpore subtus dilute testaceo; pedibus rufo-flavis.

Fuscous, with a slight olive-green reflection; head elongate, triangular, somewhat reflexed, deeply impressed on the vertex, the upper surface variegated at the sides with black and testaceous, the eyes prominent; pronotum dull, rugosely sculptured, testaceous on the anterior margin and at the extreme sides; scutellum obscurely variegated; tegmina shining, unicolorous, with the veins of the clavus distinct and parallel; abdomen dark above, the apex red, the underside light testaceous; legs orange-yellow.

Long. 10 millim.; lat. ad hum. 2 millim.

Hab. GUATEMALA, San Isidro (*Champion*).

This is a distinct but obscure species: I found it mixed in our collection with *Tettigonia urbana* and its allies, which at first sight it somewhat resembles in size and general shape.

14. **Phera lacerta,** sp. n. (Tab. XIV. fig. 8.)

Angusta, parallela, nitidior; capite magno, elongato, triangulari, apice verticis obtuse angulato, oculis magnis prominentibus; metopidio ad medium nigro, lateribus testaceis, vertice pronotoque testaceis, fusco lineatis et notatis; scutello fusco, flavo-notato; tegminibus hyalinis, lævibus, maculâ magnâ elongatâ ad marginem apicem versus venâque marginali læte rubris; pectore et abdomine plus minusve ad medium fuscis, marginibus dilute testaceis; pedibus testaceis, tibiis supra tarsisque plus minusve infuscatis.

A narrow, parallel, shining species, with a large elongate triangular head, and large prominent eyes; metopidium black, with the sides and front testaceous, the front part with a narrow black line in the centre; vertex and pronotum testaceous, with dark lines and patches, the lines on the front of the former arranged at the sides very plainly in segments of concentric circles; pronotum considerably shorter than the head, rugosely punctured; scutellum large, fuscous, with yellow markings; tegmina transparent, smooth and shining, with a large elongate patch at the margins before the apex and the marginal vein bright red; underside more or less fuscous in the middle, testaceous at the sides; legs testaceous, with the tibiæ and tarsi more or less infuscate on their upperside.

Long. 11 millim.; lat. ad hum. 2 millim.

Hab. MEXICO, Chilpancingo in Guerrero (*H. H. Smith*).

There is a specimen in our collection, from Ciudad in Durango, Mexico, 8100 feet (*Forrer*), which is closely allied to this species, but differs in having the vertex of the head a little shorter and more blunt at the apex, the dark markings of the head and pronotum more pronounced, and the tegmina less hyaline and without the red patches; it very probably belongs to a separate species, but at present I prefer to treat it as a variety.

The typical form is figured.

15. **Phera aurea.** (Tab. XIV. fig. 9.)

Cicada aurea, Fabr. Syst. Rhyng. p. 63 (1803) [1].

Tettigonia aurea, Sign. Ann. Soc. Ent. Fr. 1855, p. 514, t. 12. fig. 15 [2].

Proconia aurea, Walk. List of Homopt. Ins., Suppl. p. 231 [3].

Hab. GUATEMALA [2]; PANAMA, Bugaba (*Champion*).—SOUTH AMERICA [1], Pará, Tapajos [3], Brazil [2].

This insect appears to be rather variable in size and our specimens are somewhat small, but I believe that they must be referred to this species.

An example from Bugaba is figured.

PHERODES, gen. nov.

Genus *Pheræ* maxime affinis, elongata, parallela, capite triangulariter producto, pronoto lateribus parallelis, scutello magno, sed capite haud sulcato, tibiisque teretibus haud sulcatis præcipue differt.

Closely allied to *Phera* in shape and general appearance, but distinguished by having the vertex of the head somewhat broadly excavate behind and not furrowed, and the tibiæ very slender and smooth and without sulcation.

The insect on which I have formed this genus at first sight appears to belong to *Phera,* but it must evidently be separated from the latter genus, nor can it well be

regarded as a true *Tettigonia*. In some points it approaches the genus *Ochrostacta*, Stål, but in others it does not answer to his description.

1. **Pherodes flammeicolor,** sp. n. (Tab. XIV. fig. 10.)

Angusta, parallela, læte flammea, marginibus ad medium tegminum peranguste nigris, vertice elongato triangulari, margine extremo et quibusdam maculis parvis nigris, postice subexcavato, antice leviter sensim assurgenti; oculis fuscis, elongatis, modice prominulis; pronoto læviter sculpturato, ante scutellum nonnihil sinuato; scutello magno; tegminibus nitidis, lævibus, suturâ peranguste nigricanti; abdomine supra ad latera fusco-notato; capite subtus et pedibus dilutioribus.

Of a bright orange-colour, with part of the underside and the legs light testaceous, the upperside of the abdomen partly brownish at the sides, and the extreme margins of the head, pronotum, and basal half of the tegmina, as well as the suture very narrowly, black; there are also a few black markings on the vertex, which is shallowly excavate behind the middle and very slightly and gradually reflexed in front; head long, triangular; eyes rather long and not very prominent; pronotum finely sculptured, with two small dark markings at the base; scutellum large, with two very small dark markings at the base meeting those on the pronotum; tegmina small and shining, hyaline.

Long. 11 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

CYRTODISCA.

Cyrtodisca, Stål, Kongl. Svensk. Vet.-Ak. Handl. Band viii. no. 1 (Hemipt. Fabr. ii.), p. 60, nota (1869).

This genus was formed by Stål to include the *Tettigonia major* of Signoret; it is distinguished from *Phera* by having the head distinctly broader than long and plainly shorter than the pronotum, and from *Oncometopia* by the subtriangular and more strongly impressed head, which usually has the longitudinal line at the base deeply marked; the two veins of the clavus are usually separate, but this character, which Stål mentions as one of the characteristics of the genus, is variable, and in a specimen before me the two veins cross and form an irregular **X**; the tegmina are reticulate behind the middle, the reticulations being bounded by rather fine but distinct venation.

1. **Cyrtodisca major.** (Tab. XIV. fig. 11.)

Tettigonia major, Sign. Ann. Soc. Ent. Fr. 1854, p. 491, t. 17. fig. 8 [1].
Proconia major, Walk. List of Homopt. Ins., Suppl. p. 229 [2].
Phera major, Stål, Stett. ent. Zeit. xxv. p. 78 [3].
Proconia scissa, Walk. loc. cit. p. 226 [4].

Hab. Mexico [2] (*Sallé, in Mus. Brit.* [4]; *coll. Signoret, in Mus. Vind. Cæs.; Mus. Roy. Belg.*), Presidio de Mazatlan, Milpas in Durango (*Forrer*), Jalisco (*Schumann*), Sierra Madre de Tepic (*Richardson*), Chilpancingo, Tepetlapa, Tierra Colorada, and Rincon in Guerrero, Puente de Ixtla in Morelos (*H. H. Smith*), Atoyac in Vera Cruz (*H. H. Smith, Schumann*), Cuesta de Misantla (*M. Trujillo*), Oaxaca (*Mus. Brit.*); Guatemala [1 2], Guatemala city, Capetillo, Dueñas, and San Gerónimo (*Champion*);

Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten & Van Volxem*), Volcan de Irazu 6000–7000 feet (*Rogers*); Panama (*Boucard*), Volcan de Chiriqui (*Champion*).

The usual colour of this insect in collections is a uniform lighter or darker fuscous or reddish-brown, but lighter specimens occur with the front parts finely mottled and the anterior margins of the tegmina dark: it is probable that the colour fades considerably after death, as traces of the mottling are found on most of the fresher specimens; at all events, these lighter examples appear at most to be a variety.

A fresh and brightly-coloured specimen from Tierra Colorada is figured.

ONCOMETOPIA.

Oncometopia, Stål, Kongl. Svensk. Vet.-Ak. Handl. Band viii. no. 1 (Hemipt. Fabr. ii.), p. 60, nota (1869).

Proconia, Amyot et Serville, Hist. des Ins. Hémipt. p. 571 (1843) [nec Lepeletier et Serville, Encycl. Méthod. x. pp. 610, 611 (1825)].

This genus is characterized by having the head short, usually simply rounded in front, and never distinctly produced in an isosceles triangle, as in *Phera*; the vertex in the majority of the species is without any trace of a furrow, and, at most, there is a small and very inconspicuous longitudinal impressed line at the base; the head, viewed from the side, is thick and rounded, and convex beneath, and the anterior tibiæ are sulcate. The species are large or moderate-sized, sombre-coloured insects, and they have been usually referred to *Proconia*, but Lepeletier and Serville's types of their two divisions of this genus are respectively *Tettigonia cristata* (Fabr.) and *T. excavata*, Lep. et Serv.; the latter is a well-known and very variable Brazilian species, which has the vertex produced in an elongate triangle and deeply and broadly furrowed, and the anterior tibiæ dilated and not sulcate. The two veins of the clavus are variable, being either distinct and subparallel, or closely approaching one another, or else coalescing into one thick vein, which divides into two for a longer or shorter space at the base and apex.

1. Oncometopia rubiginosa.

Tettigonia rubiginosa, Sign. Ann. Soc. Ent. Fr. 1854, p. 491, t. 17. fig. 7 [1].
Proconia rubiginosa, Walk. List of Homopt. Ins., Suppl. p. 226 [2].

Hab. Mexico [2] (*coll. Signoret* [1], *in Mus. Vind. Cæs.*).

In general appearance this species much resembles *Cyrtodisca major*, but may easily be known from it by the more prominent eyes and the general shape of the head, as well as by the obscure fuscous markings on the tegmina. Stål, apparently accidentally, has omitted the species from his "Hemiptera Mexicana" (Stett. ent. Zeit. xxv. pp. 49–86).

2. Oncometopia rufipennis.

Tettigonia rufipennis, Sign. Ann. Soc. Ent. Fr. 1855, p. 797 [1].

Hab. Mexico (*Mus. Berol.*[1]).

I have not seen a specimen of this insect, which differs from the preceding species, according to Signoret, in being considerably smaller (length 14, as against 18 millim.), and in having the tegmina entirely reddish-hyaline and margined with yellow; the tegmina, moreover, are smoother, and not rugose as in *O. rubiginosa.*

3. Oncometopia interjecta, sp. n. (Tab. XIV. fig. 12.)

Oblonga, parallela, fusco-brunnea, tegminibus nigris, apicibus late hyalinis; capite æquilateraliter triangulari, vertice obtuso, oculis sat prominentibus; pronoto nitido, leviter transversim rugoso; tegminibus remotius et rugosius punctatis, venis crassis, elevatis; corpore subtus pedibusque fusco-violaceis.

Oblong, parallel, the head and pronotum fuscous-brown, the tegmina black, with the apex broadly and clearly hyaline; head equilaterally triangular, with the vertical angle obtuse, rounded; pronotum shining, finely rugose; scutellum large, fuscous or variegated with testaceous; tegmina rather sparingly and strongly punctured, with thick raised veins; underside and legs of a fusco-violaceous colour, the latter darker, sometimes nearly black; last ventral segment of the female emarginate, with the side-lobes short.

Long. 12 millim.; lat. ad hum. 3 millim.

Hab. Panama, Bugaba (*Champion*).

This species, at first sight, appears to be allied to *Phera vitripennis*, but it has a much shorter head. Although the head is longer and more triangular than is usual in *Oncometopia*, the insect possesses all the other characteristics of the present genus; it may, perhaps, be regarded as a connecting-link between *Phera* and *Oncometopia.*

4. Oncometopia obtusa.

Cicada obtusa, Fabr. Mant. Ins. ii. p. 269 (1787) [1]; Ent. Syst. iv. p. 33 [2]; Syst. Rhyng. p. 62 [3].
Proconia clarior, Walk. List of Homopt. Ins. iii. p. 784 (1851) [4].
Proconia parallela, Walk. loc. cit. p. 788 [5].
Tettigonia herpes, Sign. Ann. Soc. Ent. Fr. 1855, p. 796 [6].

Hab. North America, Nova Scotia [4], Florida [4].—Mexico (*Sallé, Mus. Vind. Cæs.*), Cuesta de Misantla, Jalapa (*M. Trujillo*), Atoyac in Vera Cruz (*H. H. Smith*), Orizaba (*H. H. Smith & F. D. Godman*), Teapa in Tabasco (*H. H. Smith*), Oaxaca (*Mus. Brit.*); Guatemala, San Gerónimo, Cerro Zunil (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica, Caché, R. Sucio, Volcan de Irazu (*Rogers*); Panama (*Boucard*), Bugaba, David, Volcan de Chiriqui (*Champion*).—Colombia; Venezuela [5]; Guiana, Cayenne [1 2 3]; Brazil, Bahia [6].

This seems to be a very widely distributed insect; it varies considerably in size, but intermediate forms occur. The head and pronotum are often of a lighter colour than the tegmina, and in some cases (*T. herpes*, Sign.) there are a few minute light spots sprinkled over the tegmina.

5. **Oncometopia dispar,** sp. n. (Tab. XIV. figg. 13, 13 *a*, ♂; 14, ♀.)

Oblonga; capite pronotoque testaceo vel rufo-testaceo; metopidio lineâ longitudinali nigrâ, ante apicem furcatâ; corpore subtus et pedibus testaceis; tegminibus apicibus hyalinis.

Mas. Angustior, magis parallela; tegminibus fuscis, maculis parvis testaceis sparsissime aspersis.

Femina. Latior, minus parallela; tegminibus fuscis, maculis testaceis majoribus irregularibus dense aspersis.

Oblong, with the head and pronotum testaceous or rufo-testaceous, and the metopidium furnished with a longitudinal dark line, which is forked before the apex; tegmina hyaline at the apex; underside and legs testaceous.

Male. Narrower and more parallel, more darkly coloured, with the tegmina fuscous, sprinkled very sparingly with testaceous spots and with obscurely lighter patches towards the margins.

Female. Broader, more robust, and less parallel, with the tegmina fuscous, thickly mottled with irregular testaceous spots, which cover a considerable portion of the ground-colour, and in parts more or less coalesce; apical segment of the abdomen not broadly but rather deeply emarginate, with a raised line before the central portion, and with the side-lobes rather long and rounded.

Long., ♂, 15, lat. ad hum. 3½ millim.; ♀, long. 16–17, lat. 4½ millim.

Hab. GUATEMALA, Sabo in Vera Paz (*Champion*).

The male of this species is scarcely distinguishable from the *Tettigonia herpes* of Signoret, which is synonymous with *O. obtusa* (Fabr.); it has, however, the spots somewhat different. The female is one of the most distinct insects I have seen in the group.

6. **Oncometopia tartarea.** (Tab. XIV. fig. 15.)

Phera tartarea, Stål, Stett. ent. Zeit. xxv. p. 78 (1864) [1].

Hab. MEXICO (*Sallé, in Mus. Holm.*[1]; *Mus. Vind. Cæs.*), Omilteme 8000 feet and Xautipa in Guerrero (*H. H. Smith*).

I am very doubtful as to this species: it can only be distinguished by the shape of the terminal ventral segment of the female, which Stål describes as "medio leviter trisinuatum ante sinus leviter subelevatum et ibidem utrinque dente parvo instructum." The insects I have referred to *O. tartarea* appear to agree in this respect, but the shape of the last segment of the female appears to vary. In *O. obtusa* this segment is simply emarginate, with the central space raised, and furnished in the middle with a longitudinal raised line, and with two folds at the side caused by the raised portion; the side-lobes of the segment vary in length, the folds, however, at the sides appear sometimes to split, and in this case the segment presents quite a different appearance; the longitudinal raised central line is sometimes depressed (this, however, often happens from other causes in dried specimens), and the central emarginate portion becomes sinuate in the centre and apparently more or less cut out at the side, this being very evident in three specimens in our collection from Cuesta de Misantla, Mexico, evidently belonging to the same species, one of which presents the normal form of the segment and the other two show the differences mentioned. It would seem, then, that the transition to the shape of the segment of the present species might easily take place, and if such is the case *O. tartarea* must be regarded as synonymous with *O. obtusa*, as

Stål's other characters do not appear to be constant. He speaks of the vertex of the head, for instance, as being furnished with two testaceous spots at the base, but these are only present in some specimens, and in one example, a female, in which they are very conspicuous, and in which the other characters agree with Stål's description, the last segment of the abdomen is abnormally shaped, being deeply and narrowly raised in the centre, with the central portion forming a small raised horizontal prominence; in fact, if the formation of the segment is to be taken as a specific character, this specimen might well be referred to a different species, and yet it must be treated, I think, as specifically identical with the other examples from the same locality (Omilteme). It is probable that the *Tettigonia funebris* of Signoret, from California, is identical with *O. tartarea*, as there is a specimen in the Vienna Museum labelled with both names; if such be the case, Signoret's name must be substituted, unless both are finally referred to *O. obtusa* after the examination of a larger amount of material.

A specimen from Omilteme is figured.

7. **Oncometopia fuscipennis,** sp. n. (Tab. XIV. fig. 16.)

O. obtusæ affinis, sed brevior et latior, nigra; capite et pronoto fuscis, obscure variegatis, illo lato, hoc longitudine sesqui-longiori, rugose punctato; scutello magno; tegminibus usque ad apicem fusco-hyalinum fusco-brunneis; corpore subtus pedibusque fusco-piceis, illius marginibus dilutioribus, nonnunquam flavescentibus.

Very like *O. obtusa*, but shorter and broader in proportion, black, with the front parts more or less obscurely variegated with reddish-fuscous; head short and broad; tegmina of a fuscous-brown colour, with the apex, which is usually clear hyaline, also fuscous, though transparent, and with a more or less distinct transparent spot (sometimes obscure) about the middle; sides of the body lighter, sometimes light yellow, and probably of this colour in all specimens in life.

Long. 13 millim.; lat. ad hum. 4 millim.

Hab. Mexico, Soledad and Chilpancingo in Guerrero 4600–5500 feet (*H. H. Smith*).

An example from Chilpancingo is figured.

8. **Oncometopia quadrinotata,** sp. n. (Tab. XIV. fig. 17.)

Præcedenti valde affinis, sed tegminibus nigro-fuscis quatuor maculis læte rufis instructis præcipue distinguendus.

Very closely allied to the preceding (*O. fuscipennis*) and, like it, differing from *O. obtusa* in its shorter and proportionately broader form; the tegmina, however, are darker, and at the base and outer margin of each, towards the apex, there is a bright red patch, which gives the insect a very distinct appearance; the sides of the body are a light testaceous-yellow.

Long. 14 millim.; lat. ad hum. 4 millim.

Hab. Mexico, Jalisco (*Schumann*).

I have also referred one or two other specimens doubtfully to this species, as they resemble it in shape and in the colouring of the tegmina, but have the red spots indistinct or absent. They are all from the same locality.

9. **Oncometopia miniatipennis,** sp. n. (Tab. XIV. fig. 18.)

Sat lata, nitidior, capite pronotoque nigris, rubro obscure sparsim variegatis, illo lato oculis prominentibus, hoc rugoso; tegminibus miniatis fasciis nigris irregulariter vittatis, pectoris lateribus flavo-albidis; abdomine nigro, ad latera dilutiori; pedibus piceis.

A rather broad species, with the head and pronotum black and shining, obscurely variegated with red, the former somewhat depressed in the middle of the vertex, the latter rugose; scutellum large, smooth, and shining, reddish behind; tegmina scarlet, with two irregular bands in front, formed of four large blotches connected by a narrow strip, a band behind the middle reaching across the tegmina, and the suture, black; the apex of the tegmina is fuscous and scarcely transparent; sides of the breast yellowish-white; abdomen black, a little lighter at the sides, that of the female with the last segment rather deeply and squarely emarginate, and furnished with an impression on each side before the emargination, and the side-lobes moderately large and bent towards one another; legs pitchy.

Long. 13 millim.; lat. ad hum. 4 millim.

Hab. Mexico, Milpas in Durango 5900 feet (*Forrer*).

This is a very distinct species, and quite different from any other in the group.

10. **Oncometopia undata.** (Tab. XIV. figg. 19, 20, vars.)

Cicada undata, Fabr. Ent. Syst. iv. p. 32 (1794)[1]; Syst. Rhyng. p. 62[2]; Coqueb. Illustr. Icon. Ins. i. p. 32, t. 8. fig. 3[3].

Tettigonia undata, Sign. Ann. Soc. Ent. Fr. 1854, p. 486, t. 17. fig. 5[4].

Cicada orbona, Fabr. Ent. Syst., Suppl. p. 520 (1798)[5]; Syst. Rhyng. p. 72[6].

Tettigonia orbona, Sign. Ann. Soc. Ent. Fr. 1854, p. 485, t. 17. fig. 3[7].

Proconia nigricans, Walk. List of Hompt. Ins. iii. p. 783[8].

Proconia lucernea, Walk. loc. cit. p. 785 (nec Fabr.)[9].

Proconia marginata, Walk. loc. cit. p. 785[10].

Tettigonia marginata, Sign. Ann. Soc. Ent. Fr. 1854, p. 487[11].

Proconia badia, Walk. loc. cit. p. 786[12].

Proconia scutellata, Walk. loc. cit. p. 786[13].

Proconia tenebrosa, Walk. loc. cit. p. 787[14].

Proconia plagiata, Walk. loc. cit. p. 788[15].

Hab. North America, Baltimore[7], Carolina[1–3], Florida[8 10 14].—Mexico (*Sallé; Mus. Vind. Cæs.*), Ciudad in Durango, Presidio de Mazatlan (*Forrer*), Xucumanatlan, Tepetlapa, Amula, and Chilpancingo in Guerrero, Cuernavaca in Morelos, Teapa in Tabasco (*H. H. Smith*), Jalapa (*F. D. Godman*), Jalisco, Atoyac (*Schumann*), Guanajuato (*Mus. Roy. Belg.*), Orizaba (*H. H. Smith & F. D. Godman*), Valladolid and Temax in Yucatan (*Gaumer*); Guatemala, Chiacam and San Gerónimo in Vera Paz, Guatemala city, Dueñas, Zapote, Capetillo, Cerro Zunil (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*), Caché (*Rogers*); Panama (*Boucard*), Bugaba, David, Volcan de Chiriqui (*Champion*).—Brazil[9].

There is a very large series of this common American insect in our collection, and, although the extreme forms are very different, yet I am quite unable to separate them satisfactorily into species. As a rule, the pattern of the pronotum, which is usually

traceable, forms a very good method for roughly distinguishing the species; but in some cases it is very obscure. The characters of the sexes appear to be fairly constant, the last abdominal segment of the female being squarely and more or less deeply emarginate, with the side-lobes longer or shorter in proportion: in two female specimens, however, before me, from the same locality, one has the segment broadly emarginate in almost a crescent, and the other has it narrowly and squarely emarginate. The examples differ very much in size, and also in the size and shape of the head, which in some cases is very large as compared with that of the ordinary type-form; this is particularly noticeable in a series from Chontales, Nicaragua. The colour also varies considerably, the tegmina being green, reddish, or fuscous, and the head and pronotum being also variable in this respect.

The types of *Proconia badia* [12], *P. scutellata* [13], and *P. plagiata* [15], Walk., were from unknown localities; and Fabricius [5 6] merely gives "America" for his *Cicada orbona*.

We figure two specimens—one from Atoyac and one from Chontales.

11. **Oncometopia munda,** sp. n. (Tab. XIV. fig. 21.)

Præcedenti affinis, capite pronotoque læte flavis, nigro leviter notatis, illo brevi, hoc leviter rugoso; scutello flavo, nigro-notato; tegminibus fusco-rufis, venis exterioribus et ad basim flavescentibus, apicibus late hyalinis; abdomine supra nigro; corpore subtus cum pedibus dilute flavescentibus.

Femina segmento ventrali ultimo haud emarginato.

Allied to *O. undata*, from which it differs in the colouring and pattern of the pronotum, and especially in the shape of the last ventral segment of the female; front parts yellow, marked regularly with narrow black lines, two of which form a broad and widened inverted **V** on the pronotum; tegmina fuscous, reddish, or tawny brown, with a rather broad hyaline tip; abdomen above black; underside and legs yellow or light testaceous.

Female with the last ventral segment cut straight across and not emarginate, the central portion of its apex being very slightly produced, darker, and shiny.

Long. 11 millim.; lat. ad hum. 3 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

12. **Oncometopia alpha,** sp. n. (Tab. XIV. fig. 22.)

Præcedenti affinis, sed paullo magis elongata; capite pronotoque flavis, illo vertice brevi, rotundato, litterâ **A** distincte notato; metopidio nigro-lineato, hoc lineis duabus transversis nigris ad medium coalescentibus, vix antice impresso, leviter rugoso; scutello flavo, nigro-notato; tegminibus rubro-violaceis, lineis quibusdam angustis nigris, apicibus hyalinis; corpore subtus pedibusque flavo-testaceis.

Allied to the preceding (*O. munda*), but somewhat more elongate; head with the vertex short, rounded, and with a distinct black **A**-shaped mark; metopidium with three lines in front meeting in a large irregular black patch behind; pronotum scarcely impressed in front, slightly rugose, with two transverse black lines crossing and coalescing in the centre; scutellum yellow, marked with black; tegmina of a reddish-purple colour, with narrow black lines, the most conspicuous being a wavy line behind the middle, crossing both tegmina, and another bounding the whole hyaline apex, a narrow hyaline border being left on its upper-side; abdomen dark above; underside and legs yellow-testaceous.

Long. 12 millim.; lat. ad hum. 3 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*).

It is possible that this may be one of the many forms of *O. undata*, and I at first referred it to that species, but, as will be seen from the figure, it appears to be quite distinct.

13. **Oncometopia rubescens,** sp. n. (Tab. XIV. fig. 24.)

Oblonga, parallela; capite, pronoto, scutello et femoribus læte rufescentibus, plerumque immaculatis; capite modice producto, obtuso, rotundato, oculis magnis prominentibus; pronoto longitudine multo latiori, leviter sculpturato; scutello magno, fere lævi ad medium asperato; tegminibus fusco-rufis, fortius punctatis, apicibus lævibus late hyalinis; corpore subtus violaceo, lateribus et apice abdominis albidis vel testaceis; pedibus, femoribus rufis exceptis, testaceis.

Oblong, parallel, with the front parts clear red, usually without spot or marking; metopidium rough in the middle, very finely wrinkled transversely at the sides; head moderately produced, vertex rounded; pronotum strongly transverse, finely rugose; scutellum large, smooth at the sides, roughened finely in the middle; tegmina fuscous-reddish, with strong raised veins, plainly and rather strongly, but not very closely, punctured, the apex broadly, abruptly, and clearly hyaline; femora bright red, the tibiæ and tarsi testaceous; underside purplish, the sides of the breast whitish; sides and apex of the abdomen testaceous.

Long. 12–13 millim.; lat. ad hum. 3 millim.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*); PANAMA, Bugaba, David, Volcan de Chiriqui (*Champion*).

The type-form has the front parts bright red, without any markings; at most, there is a narrow longitudinal black line on the vertex, and an obscure dark marking or two on the metopidium and scutellum. The colour varies in distinctness, and in one or two specimens has faded to testaceous; this is probably the case with many of the species. *O. rubescens* may be an extreme form of *O. undata*, but there seems enough difference to keep it at present as a distinct species.

An example from David is figured.

14. **Oncometopia bi-impressa.**

Tettigonia bimaculata, Sign. Ann. Soc. Ent. Fr. 1854, p. 362, t. 12. fig. 12 [1] (nec *bimaculata,* Sign. Revue et Mag. Zool. 1850, p. 286; Ann. Soc. Ent. Fr. 1853, p. 26, t. 2. fig. 1).

Tettigonia biimpressa, Sign. Ann. Soc. Ent. Fr. 1855, p. 811 [2].

Hab. MEXICO [1] (*Mus. Vind. Cæs.*).

I have seen only one specimen of this species, a male, belonging to the Vienna Museum collection.

15. **Oncometopia speculifera.** (Tab. XIV. fig. 25.)

Proconia speculifera, Walk. List of Hompt. Ins. iii. p. 790 (1851) [1].

Tettigonia speculifera, Sign. Ann. Soc. Ent. Fr. 1854, p. 483, t. 17. fig. 1 [2].

Hab. MEXICO (*Mus. Brit.* [2]; *coll. Signoret* [2], *in Mus. Vind. Cæs.*), Jalisco (*Schumann*), Teapa in Tabasco (*H. H. Smith*), Valladolid in Yucatan (*Gaumer*).

This and the following species are closely allied to *Phera aurea*, from which they differ in the short rounded head. Walker's type was from an unknown locality [1].

An example from Teapa is figured.

16. **Oncometopia anceps,** sp. n. (Tab. XIV. fig. 26.)

Præcedenti affinis, sed major et robustior, sat nitida, fusco-brunnea; capite et pronoto flavis vel rufo-flavis vel albido variegatis, illo brevi lato, oculis magnis prominentibus, hoc longitudine sesqui-latiori, sat fortiter rugose punctato; scutello fusco-flavo notato; tegminibus subhyalinis, apicem versus sensim paullo angustioribus, fusco-flavis vel fuscis, apice vix dilutiori, quatuor maculis parvis pone medium flavis instructis, posterioribus sæpe deficientibus; corpore subtus cum pedibus testaceis vel piceo-testaceis.

Allied to the preceding (*O. speculifera*), but larger and stouter, of a brown or fuscous-brown colour, with the head and thorax marked with reddish-yellow or whitish; head short, broad, with large prominent eyes; pronotum with three longitudinal abbreviated reddish-yellow or whitish bands, which are usually more or less broken up into spots; scutellum with the centre, apex, and extremities of the base yellowish-red or whitish, very finely sculptured; tegmina smooth and shining, subhyaline, gradually narrowed to the apex, with the apex scarcely, if at all, lighter, the veins prominent; just behind the middle of the tegmina there are one or two rather conspicuous, although small, yellowish or whitish spots, and often two more are present behind these, and other minute spots on the veins; underside and legs testaceous or pitchy-brown.

Long. 13 millim.; lat. ad hum. 3½ millim.

Hab. Mexico, Misantla (*F. D. G.*); Guatemala, Las Mercedes, Cerro Zunil (*Champion*); Panama, Bugaba, Tolé (*Champion*).

A specimen from Las Mercedes is figured.

17. **Oncometopia oaxacæ,** sp. n.

Sat lata, capite nigro, obscure fusco-rufo variegato; pronoto nigro, sat fortiter rugose punctato; scutello nigro, obscure fusco-rufo notato; tegminibus hyalinis, fusco-flavescentibus, maculâ flavâ irregulari ante apicem nigrâ vittâ ad partem cinctâ instructis; corpore subtus et pedibus piceis, lateribus illius flavo-testaceis.

A rather short species, with the head, pronotum, and scutellum black, the head, scutellum, and the anterior edge of the pronotum with obscure fuscous-red markings, the pronotum rugosely punctured; tegmina hyaline, fuscous-yellow or fuscous-brown, with an irregular yellow spot before the apex, bounded before the apex, which is vitreous, by a black fascia, which is continued for a short distance upwards at the suture; underside and legs pitchy, the sides of the body light testaceous-yellow.

Long. 12½ millim.; lat. ad hum. 3½ millim.

Hab. Mexico, Oaxaca (*Mus. Brit.*).

This species appears to be very distinct from any other member of the genus.

18. **Oncometopia flava.**

Tettigonia flava, Sign. Ann. Soc. Ent. Fr. 1855, p. 799, t. 24. fig. 19 [1].

Hab. Mexico (*Mus. Berol.*[1]).

I have not seen an example of this species, which, to judge from the description, appears to be intermediate between *Phera* and *Oncometopia*, having the rounded head of the latter, but furnished with a longitudinal furrow as in the former. Signoret describes it as yellow, but, according to his figure, it is an obscure brown insect, with the front parts and apex of the tegmina lighter.

TETTIGONIA.

Tetigonia, Geoffroy, Hist. abrég. des Ins. i. p. 429 (1764).
Tettigonia, Fabricius, Gen. Ins. p. 173 (1776) ; Signoret, Ann. Soc. Ent. Fr. 1853, p. 14.

This genus contains a very large number of species, many of which are among the most highly coloured and conspicuous of all insects ; they have for the most part a facies of their own, but it is hard to define the characters with any certainty. The *Tettigoniæ* may be, as a rule, distinguished from their allies by the smooth and more or less rounded anterior tibiæ, which are rarely flattened or sulcate, and by the absence in most of the species of the smooth projections at the sides of the head in front of the eyes, these being very conspicuous in *Aulacizes*, &c. It is possible that the genus may at some future time be divided, but it seems impossible to do this satisfactorily in the present state of our knowledge. The shape of the head is very variable, and on this character two or three groups might be separated off; but intermediate forms would render these very doubtful, and the same might be said if other characters were adopted. I have already alluded to the unsatisfactory nature of Signoret's classification of the whole group, and of Stål's dichotomous tables.

1. **Tettigonia burmeisteri.**

Dilobopterus burmeisteri, Sign. Rev. et Mag. Zool. 1850, p. 286, t. 4. fig. 5 [1].
Tettigonia burmeisteri, Sign. Ann. Soc. Ent. Fr. 1853, p. 28, t. 2. fig. 3 [2].

Hab. Mexico [1 2].

This appears to be the only Central-American species belonging to Signoret's first group of the genus *Tettigonia* ; he at first classed the insects belonging to it under a different name, *Dilobopterus*, which ought almost certainly to be retained. It is distinguished by a considerable dilatation of the cubital or claval portion of the wing *. I have not seen a specimen, but it appears to be rather a small insect (length 8 millim.), with dark head and pronotum, and light yellow tegmina, the apical third of the latter being subhyaline and smoky.

2. **Tettigonia ruficeps.**

Tettigonia ruficeps, Walk. List of Homopt. Ins., Suppl. p. 196 [1] ; Stål, Stett. ent. Zeit. xxv. p. 73 [2].

Hab. Mexico [2], Teapa in Tabasco (*H. H. Smith*) ; Guatemala (*Deby* [1]), San Juan in Vera Paz (*Champion*).

The type-form has two white bands only on the tegmina.

* Signoret calls the corium and clavus of the tegmina the radial and cubital portions respectively, and applies the same terms to the wings.

Var. *trilineata*, n. (Tab. XV. fig. 1.)

Tribus lineis albidis tegminum, lineâque albidâ centrali pronoti distinguenda.

Tegmina with three narrow white lines, the third being situated just opposite the apex of the scutellum; there is also present in some specimens an almost semicircular, more or less distinct, white line, stretching from the two ends of the white basal line across the middle of the pronotum.

Hab. PANAMA, Caldera, David, Bugaba, and Volcan de Chiriqui (*Champion*).

Var. *deficiens*, n.

Major, minus nitida, tegminibus unicoloribus nigris, haud fasciatis.

Rather larger and duller, without trace of a fascia on the tegmina, and with the thorax almost unicolorous black, the basal white line being only faintly indicated; the elytra with a bluish reflection.

Hab. COSTA Rica, Caché (*Rogers*).

It is possible that this may belong to a distinct species, in which case the name *T. deficiens* can stand, as it has not yet been applied to any member of the group.

A specimen of the var. *trilineata* from Bugaba is figured.

3. **Tettigonia resolubilis,** sp. n. (Tab. XV. fig. 2.)

T. ruficipiti v. *trilineatæ* affinis, sed minor, capite nigro, metopidio albido marginato et bilineato, fasciisque tegminum latioribus et æquidistantibus, facile distinguenda.

Rather closely allied to the var. *trilineata* of *T. ruficeps*, but on the average smaller, with the head black, the metopidium being bordered with white and with two conspicuous white longitudinal bands extending for nearly its whole length, but not touching either margin; pronotum black, smooth, and very shining, rather broadly bordered with white; tegmina shining black, with three rather broad equidistant white bands, of which the apical one is interrupted at the suture; femora bright red; tibiæ and tarsi more or less pitchy or pitchy-testaceous.

Long. 11 millim.; lat. ad hum. 3 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

4. **Tettigonia septemfasciata.** (Tab. XV. fig. 3.)

Tettigonia septemfasciata, Sign. Ann. Ent. Soc. Fr. 1853, p. 332, t. 8. fig. 11 [1].

Hab. GUATEMALA (*Sallé*).—VENEZUELA (*Mus. Brit.*), La Guayra [1].

A specimen from Guatemala is figured

5. **Tettigonia cynthia,** sp. n. (Tab. XV. fig. 4.)

Oblonga, parallela, sat lata; capite brevi, rotundato, testaceo, nigro-notato, maculis duabus læte flavis prope oculos modice prominulos sitis; pronoto lateribus parallelis, rufo-brunneo, antice nigrescenti, maculâ magnâ utrinque marginem attingente; scutello testaceo, nigro obscure notato; tegminibus obscure flavis, antice posticeque rufo-brunneis, apice subhyalino, maculis quatuor antice, duabusque lunatis postice instructis; corpore subtus flavescenti, pygofero nigrescenti; pedibus rufo-testaceis.

Oblong, parallel; the head short, testaceous, with a dark spot in the centre and two bright yellow spots near the eyes; pronotum dark in front, dark reddish-brown behind, with two large yellow spots touching the margins; tegmina yellowish, with the front part dark reddish-brown, this colour continued behind, and gradually narrowed to a point at the suture beyond the middle, where it joins another broad dark band; on the anterior dark patch there are four bright yellow spots, two in front, larger, and two behind,

smaller, and on the hinder patch two very conspicuous crescent-shaped yellow spots; apex subhyaline-testaceous; underside yellowish, with the apex of the abdominal segments orange; pygofer blackish; legs reddish-testaceous.

Long. 15 millim.; lat. ad hum. 4 millim.

Hab. PANAMA (*Boucard, in Mus. Holm.*).

This is a very conspicuous species; it was sent me with some other unnamed insects from the Stockholm Museum by Dr. Aurivillius.

There is a discoloured specimen in our collection, labelled Caché, Costa Rica (*Van Patten*), which I think may belong here, but it differs somewhat in the markings.

6. **Tettigonia chiriquensis,** sp. n. (Tab. XV. fig. 5.)

Præcedenti affinis; capite, pronoto et scutello testaceis, colore dilutiori variegatis; tegminibus fusco-brunneis, maculis testaceis duabus tribusve ad basim, maculâ conspicuâ transversâ albidâ ad latera, alterâque magnâ rufâ ante apicem fere concolorem instructis; capite cum oculis prominentibus pronoto distincte latiori; pronoto parallelo lateribus, ad medium subconstrictis; abdomine supra nigrescenti, subtus læte flavo-testaceo; pedibus testaceis.

Allied to the preceding (*T. cynthia*); head, pronotum, and scutellum testaceous, variegated with lighter colour; metopidium deep black on its lower portion, with a black spot on each side, vertex with darker markings, a yellow spot in the middle and two others near the eyes; pronotum with a small black spot at each corner; tegmina with three lighter spots at the base, the central one the most conspicuous (probably more or less confluent in other specimens), a conspicuous white lateral elongate patch, and a large red mark before the apex, the latter almost concolorous with the rest of the tegmina; head with the eyes, which are prominent, distinctly broader than the pronotum; pronotum with the sides parallel, almost constricted in the middle; abdomen dark above, light yellow-testaceous beneath; legs testaceous.

Long. 14 millim.; lat. ad hum. 3 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

7. **Tettigonia instrata,** sp. n. (Tab. XV. fig. 6.)

Præcedenti affinis, fulvo-flava, nitida; capite brevi, lato, vittâ latâ nigrâ; pronoto marginibus antice et postice et vittâ latâ mediâ nigris; scutello ad basim nigro vel nigro-notato; tegminibus hyalinis, lævibus, colore obscuriori et dilutiori plus minusve distincte variegatis; corpore subtus pedibusque flavis vel flavo-testaceis.

Similar in shape to the preceding (*T. chiriquensis*), of a tawny-yellow or obscure orange-colour; head yellow, with a broad transverse band across the vertex, and two short lines proceeding transversely from the ocelli, black; pronotum and scutellum deeper yellow, the former convex and smooth, with the anterior and posterior margins and a broad central band black, the latter with the base furnished with a small dark band not reaching across its whole length, and usually enclosing a small yellow patch in front; tegmina with the apex smoky, and the part before this transparent, showing the smoky tips of the wings behind, the rest more or less obscurely marked with darker and lighter colour, which in some specimens appears to be very faint and in others distinct; legs and abdomen testaceous or yellow-testaceous.

Long. 9–11½ millim.; lat. ad hum. 2–3 millim.

Hab. GUATEMALA, Cerro Zunil, Balheu in Vera Paz (*Champion*).

We figure a specimen from Cerro Zunil.

8. **Tettigonia larvata,** sp. n. (Tab. XV. fig. 7.)

Præcedenti affinis, flava; capite brevi, rotundato, oculis prominulis, nigrâ lineâ transversâ ante ocellos instructo; pronoto marginibus antice et postice et lineâ transversâ ad medium interruptâ nigris; tegminibus marginibus, apice, vittâ pone scutellum, alterâ post medium, tertiâque latâ ante apicem subhyalinum duas maculas flavas cingente, fuscis; abdomine supra flavo-rufo, ad partem fusco; corpore subtus pedibusque testaceis.

Allied to the preceding (*T. instrata*), of a yellow or orange-yellow colour; head with two small black markings in front of the vertex, a transverse band in front and the base black; pronotum convex, smooth, with the anterior and posterior margins and an interrupted central band black; scutellum with two black spots touching the base and a very small one in the centre; tegmina with the margins, apex, a narrow band near the scutellum, another behind the middle, and a third before the apical subhyaline portion, fuscous; the latter including two very well-defined round yellow spots; wings fuscous at the apex; abdomen reddish-yellow, partly fuscous above; underside and legs testaceous.

Long. 10–12 millim.; lat. ad hum. $2\frac{1}{2}$–3 millim.

Hab. Panama, Bugaba and Volcan de Chiriqui (*Champion*).

9. **Tettigonia pardalina,** sp. n. (Tab. XV. fig. 8.)

Præcedenti valde affinis, sed transversâ vittâ pronoti latiori, tegminibusque fusco-brunneis quatuor maculis antice, vittâ pone medium, maculisque duabus ante apicem flavescentibus; apice ipso late fusco, spatio ante hunc anguste hyalino; abdomine supra rufo-flavo, subtus dilute testaceo, apice segmentorum nigro; pedibus testaceis.

Rather closely allied to the preceding (*T. larvata*), but easily distinguished by the markings, the band on the pronotum being broader and not interrupted, and the tegmina fuscous-brown, with six yellow spots, none of which touch the margins, four of them situated in front of a yellow band beyond the middle and two behind this band; the apex is broadly fuscous, and the space before this narrowly subhyaline; abdomen reddish, darker above, light testaceous below, with the apex of the segments black; legs testaceous.

Long. 10–12 millim.; lat. ad hum. $2\frac{1}{2}$–3 millim.

Hab. Mexico (*Sichel, in Mus. Vind. Cæs.*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

It will be seen from the figure that this species is quite distinct. There is a broken specimen in our collection, labelled Caché, Costa Rica (*Rogers*), which appears also to belong to it. The Mexican example in the Vienna Museum has the front four spots on the tegmina fused into two bands.

We figure a typical specimen from the Volcan de Chiriqui.

10. **Tettigonia coctilis,** sp. n. (Tab. XV. fig. 9.)

Oblonga, parallela, rufo-testacea, concolor, vix nitida; capite brevissimo, vix ante oculos prominulos producto; pronoto brevi, antice utrinque impresso; scutello magno; tegminibus apice hyalino ad extremum fuscato; abdomine supra fusco; corpore subtus rufescenti; pedibus piceo-testaceis, femoribus rufis.

Oblong, parallel, of a unicolorous brick-red colour, probably a bright orange-red in life, scarcely shining, with the basal margin of the pronotum lighter, and the apex of the tegmina hyaline with red veins, the extreme tip being fuscous; head very short, scarcely produced beyond the prominent eyes, vertex almost truncate; pronotum short; scutellum large; tegmina extremely finely punctured; abdomen fuscous above, red below; legs pitchy-testaceous, with the femora red.

Long. 13–14 millim.; lat. ad hum. $3\frac{1}{2}$ millim.

Hab. Mexico (*Mus. Vind. Cæs.*).

A specimen of this very distinct species was sent me among some unnamed material from Signoret's collection.

11. **Tettigonia lignea,** sp. n. (Tab. XV. fig. 10.)

Oblonga, parallela, sat lata; capite brevissimo, vix ante oculos producto, nigro-maculato; pronoto brevi, antice quam postice latiori, basi rectâ, testaceo; scutello fusco-testaceo; tegminibus brunneis, flavo irregulariter variegatis, vix nitidis, apice subhyalino; corpore subtus pedibusque testaceis.

Oblong, parallel, rather broad; head very short, scarcely produced before the eyes, which are prominent, testaceous, with two black spots, one at the top of the metopidium, and the other at the base of the vertex; pronotum rufo-testaceous, impressed in front, with the basal margin straight and narrower than the anterior margin; tegmina brown, with irregular yellow markings, the chief of these forming a broad band at about the middle and a broad space just before the apex, both being divided by the brown veins; abdomen and legs testaceous, anterior tibiæ and the apex of the intermediate and posterior pairs, and the tarsi in front, pitchy.

Long. 12–13 millim.; lat. ad hum. $3\frac{1}{2}$ millim.

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*).

12. **Tettigonia quinquesignata.** (Tab. XV. fig. 11.)

Tettigonia 5-*signata,* Walk. List of Homopt. Ins., Suppl. p. 194[1].
Tettigonia multivirgata, Stål, Stett. ent. Zeit. xxv. p. 73[2].

Hab. Mexico[2] (*Sallé*[1]; *Mus. Holm.*; *Mus. Vind. Cæs.*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), San Lorenzo near Cordova (*M. Trujillo*); Guatemala, Lanquin, Cahabon, Purula, and Senahu in Vera Paz (*Champion*).

This insect appears to vary considerably in size. The single specimen from Senahu differs slightly from the others, but it evidently belongs to the same species.

A specimen from Atoyac is figured.

13. **Tettigonia mosaica,** sp. n. (Tab. XV. fig. 12.)

Præcedenti affinis, griseo-testacea, brunneo, hyalino testaceoque variegata; capite ante oculos leviter producto, rotundato, metopidio nigro-lineato; pronoto lævi, figurato; scutello magno; elytris nitidis, lævibus, versicoloribus; abdomine supra fusco; corpore subtus pedibusque dilute testaceis, basi segmentorum nigro-maculatâ.

Of a griseo-testaceous colour, mottled with brown, testaceous, and hyaline; head somewhat produced before the eyes, rounded, with a fine pattern in black lines, the eyes prominent; pronotum, scutellum, and base of tegmina tessellated with brown and testaceous (like mosaic-work), the latter with a distinct yellow spot at each margin and a smaller one behind, joining a large irregular hyaline band running right across the tegmina; before the apex, which is hyaline, are six light spots arranged transversely; abdomen fuscous above, the underside of the body and legs light testaceous, the base of each of the abdominal segments being marked with two black spots.

Long. 9–10 millim.; lat. ad hum. 2–3 millim.

Hab. Mexico (*coll. Signoret, in Mus. Vind. Cæs.*).

There are two specimens of this species among some material sent to me from the Vienna Museum as undetermined. One of them is labelled "*semiclara*, det. Signoret";

but it is not the "*semiclara*" of Signoret's Monograph, which is from Pulo Penang, as is evident from his description and figure (Ann. Soc. Ent. Fr. 1853, p. 666, t. 21. fig. 9).

14. **Tettigonia melancholica,** sp. n. (Tab. XV. fig. 13.)

Præcedenti affinis, grisea vel brunneo-grisea; capite brevi, lato, oculis prominentibus; pronoto fasciâ latâ ad medium obscuriori; scutello griseo-testaceo; tegminibus isabellinis, fasciis tribus obscurioribus, apice hyalino; alis fumosis; abdomine supra rufo, corpore subtus testaceo; pedibus testaceis, plus minusve piceis.

In shape resembling the preceding species (*T. mosaica*), dun-coloured or griseous-brown; head short, broad, with prominent eyes; pronotum with a dark fascia situated just behind the middle; scutellum greyish-testaceous, with a broad fascia before and another behind the middle, and a narrower one before the subhyaline apex, darker; there are also two oblique darker lines, one on each side of the scutellum, and the veins are sometimes conspicuously darker than the ground-colour; wings smoky; abdomen red above; underside and legs testaceous, the latter more or less pitchy.

Long. 10–11 millim.; lat. ad hum. 3 millim.

Hab. PANAMA, Bugaba (*Champion*).

15. **Tettigonia lineosa,** sp. n. (Tab. XV. fig. 14.)

Brevis oblonga, parallela, flava vel testacea; capite brevi, lato, rotundato, oculis prominentibus, nigro vittato; pronoto levissime transversim rugoso, marginibus et vittâ latâ transversâ ad medium nigris; scutello lineâ unâ transversâ nigrâ; tegminibus vittâ pone medium maculam albidam transversam includente, lineisque quibusdam obliquis a basi ad hanc extensis nigris, apice ipso fumoso; abdomine læte rufo; pedibus testaceis.

Short oblong, golden-yellow, yellow, or testaceous; head short and broad, rounded in front, with prominent eyes; metopidium black, with a larger or smaller central yellow patch, vertex black in front and behind, and with a transverse line across the middle; pronotum very finely transversely rugose, with the anterior margin narrowly and the posterior margin broadly black, and with a broad central median line; scutellum with a small central transverse line not reaching the margins; tegmina with a dark patch behind the middle enclosing towards its apex two whitish transverse sublunate spots, and with the margins, the suture, and several lines nearly or quite meeting this patch black; the line on the clavus is shorter; apex of the tegmina and the wings fuscous; abdomen bright red, with the central portion of the pygofer black; legs testaceous.

Long. 8 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

16. **Tettigonia corixoides,** sp. n. (Tab. XV. fig. 15.)

Præcedenti similis, sed capite paullo longiori, magis producto; capite nigro, metopidio duabusque lineis notisque parvis pone ocellos flavis; pronoto nigro flavo-variegato, lævi; tegminibus antice hyalinis, venis fuscis, pone medium fuscatis hyalino variegatis; abdomine supra nigrescenti; corpore subtus cum pedibus dilute testaceis.

Like the preceding (*T. lineosa*) in general appearance, but with the head more produced and more angularly rounded; head black, with the metopidium and two transverse lines and two minute spots behind the ocelli sometimes confluent with the end of the hinder line yellow; pronotum black, with the central portion longitudinally and some patches towards the sides obscurely yellow; scutellum variegated; tegmina fuscous-hyaline in front, with the veins dark, and with the hinder part from a little beyond the

middle fuscous, variegated with hyaline at the sides and before the apex; abdomen dark above; underside and legs light testaceous.

Long. 6–7 millim.; lat. ad hum. 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species, as its name implies, bears a close resemblance at a little distance to a small species of *Corixa*.

17. **Tettigonia conspissata,** sp. n. (Tab. XV. fig. 16.)

Oblonga; capite pronotoque testaceis nigro figuratis, illo producto subtriangulari late rotundato, oculis prominulis, hoc convexo basi haud sinuatâ; scutello figurato; tegminibus fuscis, lineis sex vel septem testaceis obliquis ad suturam vel ad tertiam partem apicalem extensis, hâc nigrescenti partim hyalinâ vittâ albidâ antice alterâque interruptâ postice instructâ; abdomine supra nigrescente; corpore subtus cum pedibus dilute testaceis, unguibus piceis.

Oblong, the head, pronotum, and scutellum testaceous, figured with black; head somewhat produced before the eyes, which are moderately prominent; pronotum convex, with the base not or hardly perceptibly sinuate; tegmina fuscous, with six or seven oblique testaceous lines extending from the shoulders to the apical third, which is dark, variegated with hyaline, and with two white or greenish-white bands which are made up of confluent spots and so not quite regular—one of these is situated at the front part of the dark portion and extends across the tegmina, the other (just before the apex) is interrupted at the suture; the hinder markings, however, appear to be somewhat variable; abdomen dark above; underside of body and legs light testaceous, the claws dark.

Long. 8–9 millim.; lat. ad hum. 2 millim.

Hab. GUATEMALA, Senahu and Chiacam in Vera Paz (*Champion*).

18. **Tettigonia multilineata,** sp. n. (Tab. XV. fig. 17.)

Sat lata, robusta, testacea; capite producto, triangulari, oculis minus prominentibus, nigro figurato; pronoto brevi ut capite nigro figurato, leviter sculpturato; scutello nigro notato; tegminibus amplis, lineis sex vel septem obliquis utrinque instructis ad suturam vel ad apicem ipsum extensis; alis fumosis; abdomine subtus rufo, testaceo nigroque variegato; pedibus læte rufis, tarsis plus minusve fuscatis.

Rather a broad stout species, broadest at about the middle, testaceous, with the front parts figured with black; the tegmina with six or seven oblique lines on each parallel to the scutellum and reaching the suture on the apex, which is not hyaline; head produced, forming with the eyes, which are only slightly prominent, an equilateral triangle; pronotum rather short, slightly narrowed in front, gently sinuate at the base; tegmina smooth; underside of the abdomen red, variegated with black and testaceous, the front parts testaceous, variegated with black; legs bright red, with the tarsi more or less pitchy.

Long. 10–11 millim.; lat. ad hum. $3\frac{1}{2}$ millim.

Hab. MEXICO, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

19. **Tettigonia lateralis.** (Tab. XV. fig. 18.)

Cercopis lateralis, Fabr. Ent. Syst., Suppl. p. 524[1].
Cercopis marginella, Fabr. Syst. Rhyng. p. 96[2].
Tettigonia costalis, Sign. Ann. Soc. Ent. Fr. 1854, p. 359, t. 12. fig. 8[3].
Tettigonia lugens, Walk. List of Homopt. Ins. iii. p. 775[4].
Tettigonia pyrrhotelus, Walk. loc. cit. p. 775[5].

Hab. NORTH AMERICA, Canada[2], Nova Scotia[4], Carolina[1], Florida[5]. — MEXICO

(*Bilimek, in Mus. Vind. Cæs.* [1]), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*); Guatemala, Panajachel 5000 feet (*Champion*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).—Colombia [3] [4].

T. lateralis seems to be a very wide-spread and somewhat variable insect. I have seen specimens of it from the Vienna Museum, as well as others in the British Museum, and though they differ slightly from the Central-American examples I think the latter must be treated as a local form of the same species. The light line on each side of the under surface of the body continued to the head, though sometimes broken up and absent, seems to be characteristic of *T. costalis*. It may perhaps be of use to give a description of our insect:—

Short and robust, with the head and pronotum black, speckled more or less thickly and distinctly with testaceous or whitish spots; head large, rather short, triangularly rounded, with large and prominent eyes; pronotum short, more or less distinctly rugose, with the base very gently and broadly sinuate; scutellum large, almost smooth or very slightly sculptured, dark, with light spots or markings; tegmina leaden-coloured or leaden with a reddish tinge, with the veins thick and dark, the colours often extending a little on either side of the veins, which are continued to the apex, the apex itself being hyaline; underside of the body light at the sides, the light colour extending to the head, dark or reddish-brown marked with testaceous in the centre; legs pitchy-testaceous or pitchy, the femora red, sometimes partly dark and marked with testaceous spots. Long. 6–7 millim.; lat. ad hum. 3 millim.

A specimen from the Volcan de Chiriqui is figured.

20. **Tettigonia punctulata.** (Tab. XV. fig. 19.)

Tettigonia punctulata, Sign. Ann. Soc. Ent. Fr. 1853, p. 345, t. 9. fig. 15 [1].

Hab. Mexico (*Sallé*), Presidio de Mazatlan (*Forrer*), Chilpancingo, Venta de Zopilote, Tepetlapa and Amula in Guerrero, Cuernavaca in Morelos (*H. H. Smith*).

The shape of the head appears to differ somewhat in this species, and the colour is at times variable. The specimens from Chilpancingo, with one or two exceptions, are brighter and have the head narrower and longer, and but for intermediate examples from the same locality they might be regarded as belonging to a separate species. Signoret apparently described his species on one example, for he says, "l'abdomen manque": this part of the insect is bright red above and below. He figures an insect of the shape of the variety from Chilpancingo, with the markings of the head and pronotum of the more widely distributed form, which are slightly different, especially those of the head.

There is a considerable series of the species in our collection. A specimen from Chilpancingo is figured.

21. **Tettigonia germana,** sp. n. (Tab. XV. fig. 20.)

T. punctulatæ affinis, sed major; capite breviori, hoc cum pronoto et scutello dilutioribus, magis confluenter notatis, scutello ad apicem conspicue testaceo; tegminibus longioribus haudquaquam lineatis, rubris,

colore dilutiori et obscuriori plus minusve distincte variegatis, apice late hyalino; alis fumosis; abdomine flavo; corpore subtus testaceo; pedibus piceis.

Allied to *T. punctulata*, but, as a rule, larger, with the front parts more confluently marked and lighter, and the head broader and shorter; scutellum variegated in front, the apex plain testaceous; tegmina red, mottled obscurely with lighter and darker colour, and without any trace of a linear arrangement of the colour such as is always present in *T. punctulata*, the apex broadly hyaline; wings smoky; abdomen yellow; underside testaceous; legs pitchy or pitchy-testaceous.

Long. 11–12 millim.; lat. ad hum. vix 3 millim.

Hab. Mexico (*Sallé; Mus. Vind. Cæs.; Mus. Holm.*), Cuernavaca in Morelos, Xucumanatlan, Chilpancingo, Amula, and Omilteme in Guerrero, Atoyac in Vera Cruz (*H. H. Smith*), Orizaba (*Bilimek, in Mus. Vind. Cæs.*).

I have found specimens of this species among the unnamed material sent me from the Stockholm and Vienna Museums; it is very distinct, but has apparently been overlooked.

The examples from Cuernavaca, Chilpancingo, and Atoyac have the markings much coarser and more confluent, but they do not appear to be structurally different from the others.

We figure a specimen from Xucumanatlan.

22. **Tettigonia præterita,** sp. n. (Tab. XV. fig. 21.)

Nigra vel fusca, testaceo plus minusve notata; capite producto, triangulari, oculis vix prominulis; pronoto convexo, duabus maculis distinctis et aliis notis testaceis; scutello nigro, testaceo-variegato, postice testaceo; tegminibus rubris, apice hyalino, fere concoloribus sine lineis vel notis obscurioribus; abdomine supra rufescenti; corpore subtus plerumque nigro, testaceo-variegato; pedibus testaceis, ad partem nigricantibus.

Black or fuscous, with testaceous markings, and two conspicuous similarly coloured spots, one on each side of the central line of the pronotum; tegmina crimson, without distinct lines or darker markings, hyaline at the apex; abdomen red or brownish above, reddish in the middle beneath, the rest of the underside dark, with testaceous markings; legs testaceous, partly black or pitchy.

Long. 9 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Xucumanatlan and Omilteme in Guerrero 7000 to 8000 feet (*H. H. Smith*).

After working through a large number of examples of the species of *Tettigonia* with red tegmina, which form the most obscure and difficult group of the genus, I came at last to three specimens which could not be referred to any of the others: two of these I have here described under the name *T. præterita.* They differ *inter se* in the markings of the head and pronotum, but appear to be structurally alike. The present species is allied to *T. punctulata*, from which it differs in having the tegmina wider at the apex and differently coloured, as well as in the quite different markings of the fore parts; from *T. germana* they may be distinguished by the shorter elytra and the longer and more triangular head.

The specimen from Xucumanatlan is figured.

23. **Tettigonia monticola,** sp. n. (Tab. XV. fig. 22.)

Brevis, robusta, nigra, testaceo sparsim notata; capite producto, triangulari, oculis vix prominulis; pronoto antice fortius semicirculariter impresso, duabus maculis et aliis notis testaceis; scutello postice testaceo; tegminibus amplis, latioribus, leviter sed distincte sculpturatis, rubris, corio maculâ albidâ magnâ irregulari ante medium instructo, apice vix hyalino; alis opacis, albido-fumosis; abdomine supra nigro, apicem versus testaceo, subtus fusco, testaceo minute irrorato; pedibus piceis.

A short and stout species, black, with testaceous markings; head produced, triangular, eyes scarcely prominent; pronotum with a strong impression in front and one on each side, with two testaceous spots as in the preceding species (*T. prætérita*) and other markings; tegmina ample, broad in proportion to their length, crimson, with the upper and lower borders very narrowly dark for part of their length, and with minute whitish markings; corium with a large irregular white patch before the middle; the sculpture is fine but distinct; wings smoky-white; abdomen dark above, testaceous towards the apex; underside dark, with minute testaceous spots; legs pitchy, in part lighter.

Long. 7 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Sierra de las Aguas Escondidas in Guerrero 9500 feet (*H. H. Smith*).

This insect may easily be known by its short broad tegmina and the conspicuous white patch on the corium; it was captured at the highest altitude from which we have received any specimen of the genus and may perhaps be a mountain-form of one of the allied species.

24. **Tettigonia mediolineata,** sp. n. (Tab. XV. fig. 23.)

Brevis, flavescens, nigro lineata et figurata; capite sat producto, triangulari, oculis modice prominulis; pronoto convexo, lævi, lineâ latâ mediâ flavâ a basi verticis usque ad apicem scutelli et interdum ad apicem verticis continuatâ, aliisque ad latera plus minusve curvatis instructo: tegminibus rufis, apice hyalino, marginibus anguste et suturâ clavali fuscatis; alis fumosis; abdomine supra nigro, subtus nigro, ad partem albido vel testaceo; pedibus testaceis, nigro- vel piceo-variegatis aut lineatis.

Short and rather thick, yellow, lined and figured with black; head somewhat produced, triangular, eyes moderately prominent; pronotum convex, smooth, with a broad central yellow line, which is continued from the base of the vertex to the apex of the scutellum and sometimes to the apex of the vertex, and with two other more or less regular curved lines on either side; tegmina red, hyaline at the apex, with the margins narrowly and the claval suture fuscous, and the space next the suture and part of the intravenal spaces lighter; wings dark smoky; abdomen black above, underside black, with the segments marked with whitish; pygofer yellow; legs yellow or testaceous, marked or broadly lined with black.

Long. 8 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Mexico (*Mus. Vind. Cæs.; Boucard, in Mus. Holm.*), Ciudad and Ventanas in Durango (*Forrer*), Omilteme in Guerrero 8000 feet (*H. H. Smith*).

This species varies somewhat in size and colour, the broad central line being continued either from the base or apex of the vertex to the apex of the scutellum; in the former case the markings on the head are more distinct. The tegmina have the lighter band inside the costal margin more or less distinct, and sometimes (as in the case of two specimens in the Stockholm Museum) it is broad and clear light yellow, and extends from the shoulders almost to the apex. In the Vienna Museum there is a specimen, labelled "Bilimek, Mexico," with the broad central line very distintc, but

with the markings of the tegmina rather resembling those of *T. punctulata*, but it evidently belongs to this species.

We figure an example from Omilteme.

25. **Tettigonia magica.** (Tab. XV. figg. 24; 25, var.)

Tettigonia magica, Stål, Stett. ent. Zeit. xxv. p. 77 [1].

Hab. Mexico (*Mus. Holm.*[1] *& Mus. Vind. Cæs.*), Chilpancingo and Rincon in Guerrero (*H. H. Smith*), Cuernavaca in Morelos (*H. H. Smith*, *Bilimek*), Orizaba (*Bilimek*, *H. H. Smith*, *& F. D. Godman*).

This is a very easily recognized species, with the head rather produced and narrower than in several of the allied forms, and the markings of the head, thorax, and scutellum distinct and constant. I have found several specimens of it among unnamed material belonging to the Vienna Museum. As a rule, the tegmina have the ground-colour red, but a common variety has the whole ground-colour greenish-testaceous, without any red on the insect.

A specimen from Chilpancingo and a variety from Orizaba are figured.

26. **Tettigonia consobrina,** sp. n. (Tab. XV. fig. 26.)

Fusco-rufa, maculis parvis dilutis regulariter aspersa; capite producto, haud triangulari, antice rotundato, oculis prominulis; pronoto sat longo, basi vix sinuatâ; scutello ad medium impresso; tegminibus apicem versus angustatis; abdomine supra fusco; corpore subtus rufescente; pedibus rufo-brunneis.

Dark fuscous-red, regularly sprinkled from the metopidium to the apex of the tegmina with small light spots, which are testaceous on the front parts, and greyish and more obscure on the tegmina; head produced, not triangular, rounded, eyes rather prominent; pronotum comparatively long; scutellum impressed in the middle; tegmina narrowed towards the apex; wings dark; abdomen fuscous above, underside reddish or reddish-yellow; legs reddish-brown, almost unicolorous, or with more or less of the tibiæ and tarsi infuscate.

Long. 7 millim.; lat. ad hum. 2 millim.

Hab. Guatemala, Cerro Zunil (*Champion*).

This species is allied to *T. punctulata*, but it is smaller, with the head longer and differently shaped, the pronotum longer in proportion, and the tegmina covered with small spots, whereas in *T. punctulata* they are more or less distinctly lined.

27. **Tettigonia granulata.** (Tab. XV. fig. 27.)

Tettigonia granulata, Walk. List of Homopt. Ins., Suppl. p. 195 [1].

Hab. Mexico (*Sallé, in Mus. Brit.*[1]); Guatemala, San Gerónimo, Zapote, and Cerro Zunil (*Champion*).

We figure a specimen from San Gerónimo.

28. **Tettigonia ståli.** (Tab. XV. fig. 28.)

Tettigonia stålii, Sign. Ann. Soc. Ent. Fr. 1855, p. 787, t. 24. fig. 5 [1].

Hab. MEXICO (*Mus. Vind. Cæs.*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Pantaleon, San Isidro, and Cerro Zunil (*Champion*).

This species is rather closely allied to *T. granulata*, but differs in the distinct large yellow stripes and markings.

ar. *fractinota*, n. (Tab. XV. fig. 29.)

Vittis longitudinalibus flavis plus minusve fractis vel abbreviatis, vel ad partem deficientibus facile distinguenda.

Of a bright dark crimson colour, with the front parts darker, and the usual longitudinal yellow or orange spots abbreviated or, especially on the tegmina, broken up into short patches or spots; on the average the size appears to be somewhat smaller.

Long. 8–9 millim.; lat. ad hum. 2–2½ millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Isidro (*Champion*); NICARAGUA, Chontales (*Janson*).

I should describe this as a new species but for the occurrence of distinctly intermediate forms, and also of two or three specimens of undoubted *T. ståli* in our long series from Teapa, which all appear to belong to one variable insect.

A type specimen from Pantaleon and one of the variety from Teapa are figured.

29. **Tettigonia pumicata,** sp. n. (Tab. XVI. fig. 1.)

Elongata, postice acuminata, nitida; capite pronotoque nigris, testaceo obscure maculatis, illo breviter producto, perobtuse rotundato, oculis prominulis, hoc convexo levissime transversim striato, basi fere rectâ; scutello magno, nigro, immaculato; tegminibus rubris, lævibus, apice haud hyalino; corpore subtus rubro; pedibus rufis vel rufo-piceis.

A moderate-sized species, acuminate behind when the tegmina are folded, smooth and shining; head and pronotum black, vertex with four testaceous spots at the base, slightly produced before the eyes, very obtusely rounded; head with the eyes, which are rather prominent, about as broad as the base of the pronotum; pronotum convex, finely transversely rugose, with minute testaceous spots; scutellum shining, immaculate; tegmina smooth, somewhat tectiform, red, without markings, and not hyaline at the apex; wings dark; underside of the body red, the segments of the abdomen partly black; legs red or pitchy-red.

Long. 10 millim.; lat. ad hum. 2½ millim.

Hab. PANAMA, Volcan de Chiriqui 3000 to 6000 feet (*Champion*).

This species somewhat resembles *T. rutilans*, Walk. (nec Fabr.), but differs in the shape of the head, the concolorous tegmina, and the testaceous markings on the base of the vertex and on the pronotum.

30. **Tettigonia guerreroensis,** sp. n. (Tab. XVI. fig. 2.)

Brevis, robusta; capite pronotoque testaceis, nigro brunneoque figuratis, illo breviter triangulari, oculis haud vel vix prominentibus; metopidio nigro, testaceo irrorato, hoc levissime sculpturato, basi leviter supra scutellum sinuatâ; scutello antice nigro, maculis duabus parvis ocellatis ad basim, postice testaceo;

tegminibus amplis rufis griseo irroratis, clavo plerumque dilutiori ; abdomine supra fusco, subtus testaceo, ad partem rufo marginato ; pedibus testaceis, tarsis ad partem fuscis.

A short, robust species, broadest at about the middle ; head and pronotum testaceous, figured with black and brown, metopidium deep black, with testaceous markings, and a large round black spot surrounded with testaceous just below the vertex, which appears to be constant ; head short, triangular, with the eyes not prominent ; pronotum very gently sinuate above the scutellum ; scutellum with two ocellate spots at the base and testaceous behind, the colour being a little interrupted, and usually forming a sort of face ; tegmina red, clavus lighter, sometimes reddish-testaceous, the whole being scantily sprinkled with small greyish spots, which are sometimes indistinct ; abdomen dark above, testaceous below, with part of the upper segments red ; legs testaceous, tarsi in part pitchy.

Long. 7 millim. ; lat. ad hum. 2–2½ millim.

Hab. Mexico, Omilteme and Xucumanatlan in Guerrero 7000 to 8000 feet (*H. H. Smith*).

31. **Tettigonia appropinquans,** sp. n. (Tab. XVI. fig. 3.)

Antice latior, postice sensim angustata, testacea ; metopidio plus minusve nigro ; capite pronotoque nigro notatis, illo producto, triangulari, oculis vix prominulis, hoc postice plus minusve obscuriori, antice maculis quatuor nigris transversim dispositis, interioribus sæpe minoribus nonnunquam fere deficientibus instructo, basi vix sinuatâ ; scutello fere toto testaceo sed variante ; tegminibus plumbeo-rufis, colore obscuriori ad venas plus minusve distincte oblique lineatis ; corpore subtus testaceo, ad medium et antice ad latera nigro notato ; pedibus testaceis, femoribus plus minusve nigro-maculatis.

An obscure-looking species, testaceous, with darker markings, and the tegmina of a leaden-red colour, with the veins and the space bordering on them usually darker ; head produced, triangular ; metopidium usually in great part black and always with a testaceous band just before the vertex, in the centre of which is a distinct black spot, vertex shallowly compressed at the centre and sides ; pronotum with the hinder part darker, but sometimes unicolorous testaceous, except just at the base, with four spots arranged transversely in front, the centre pair being often smaller, sculpture fine but distinct ; scutellum mostly testaceous ; tegmina gradually narrowed behind ; wings smoky ; abdomen dark above, testaceous at the sides, breast testaceous, marked with black ; legs testaceous, femora more or less marked with fuscous.

Long. 7 millim. ; lat. ad hum. 2 millim.

Hab. Mexico (*Boucard, in Mus. Holm. ; Mus. Vind. Cæs.*), Omilteme and Chilpancingo in Guerrero (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*).

In the Vienna Museum there are two specimens referred to *T. uniguttata*, Walk., one of which appears to belong to this species and another to a variety of it, but neither of them answers to Walker's description of *T. uniguttata*.

A specimen from Chilpancingo is figured.

32. **Tettigonia transfuga,** sp. n. (Tab. XVI. fig. 4.)

Sat robusta, rufescens ; capite producto, obtuse triangulari, oculis vix prominulis, vertice maculis quinque nigris magnis ; pronoto capite paullo longiori, maculis quatuor nigris ante basim, duabusque aliis majoribus ad apicem instructis ; scutello nigro-maculato ; tegminibus brunneo-rufis unicoloribus ; abdomine supra fusco, rufo-variegato ; corpore subtus flavescente vel rufo-flavescente, sterno ad partem nigrescente ; pedibus rufo-flavis.

A rather stout species, with the front parts red ; head produced, obtusely triangular, eyes scarcely prominent, vertex with five large black spots, and the usual round spot at the tip ; metopidium black, with the central portion red ; pronotum a little longer than the head, with four black spots arranged in a transverse

line before the base and two other larger ones; scutellum more or less broadly marked with black; tegmina reddish-brown, unicolorous; abdomen fuscous above, with the segments posteriorly and usually the apex crimson; underside yellowish or reddish- or brownish-yellow; sternum in part black; legs dusky orange, sometimes slightly infuscate.

Long. 7–8 millim.; lat. ad hum. $2\frac{1}{4}$ millim.

Hab. MEXICO, Sierra de las Aguas Escondidas and Omilteme in Guerrero 8000 to 9500 feet (*H. H. Smith*).

This is a very distinct species; it is in some points allied to *T. appropinquans*.

33. **Tettigonia ignobilis,** sp. n. (Tab. XVI. fig. 5.)

Parva, subparallela, obscura, supra rufo-brunnea vel brunnea, testaceo griseoque plus minusve indistincte irrorata; capite sat longo producto, triangulari, figurato; metopidio nigro, flavo-notato; pronoto brevi, antice dilutiori, lateribus fere parallelis, basi levissime sinuatâ; scutello figurato; tegminibus griseo irroratis; alis fumosis; corpore subtus nigro, apice testaceo; pedibus flavo-testaceis.

A small, obscure, subparallel species, with the upper surface reddish-brown or brown, sprinkled with minute testaceous and greyish spots; head produced, triangular, with darker and lighter lines forming a pattern, which is often indistinct or almost wanting, eyes scarcely prominent; pronotum short, with the sides nearly parallel, the front border and the lateral margins lighter and the rest darker, very finely but distinctly sculptured; scutellum dark, with a longitudinal testaceous line at the apex and two others at the base, which are often circular and enclose a dark ocellate space; tegmina with minute greyish spots, which are sometimes indistinct, the pattern being usually continued to the extreme apex; underside black, with the apex, and the ventral segment posteriorly very narrowly, yellow; legs yellow-testaceous.

Long. 5–6 millim.; lat. ad hum. vix 2 millim.

Hab. MEXICO, Omilteme and Chilpancingo in Guerrero, Cuernavaca in Morelos (*H. H. Smith*).

A specimen from Cuernavaca is figured.

34. **Tettigonia superflua,** sp. n. (Tab. XVI. fig. 6.)

Sat robusta, fusiformis, viridis, testaceo-variegata, vel dilute testacea vel albida, fusco, rufo-brunneo, et griseo variegata; capite producto, triangulari, oculis magnis, prominulis; pronoto capite haud longiori, antice angustato et impresso, margine anteriori et plerumque lateribus dilutioribus; tegminibus nitidis; corpore subtus flavo vel plus minusve nigro; pedibus testaceis, tarsis ad partem fuscatis.

Rather robust, fusiform, green, with the front parts more or less testaceous, or light testaceous-white variegated with fuscous, reddish-brown, and greyish; head produced, distinctly triangular, with large and rather prominent eyes; pronotum not longer than the head, narrowed and impressed in front, with the anterior part lighter; tegmina variable in colour; underside yellow, or more or less black, pygofer yellow; legs testaceous, the tarsi more or less infuscate.

Long. 6 millim.; lat. ad hum. 2 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith.*)

This insect is allied to *T. ignobilis*, but it is differently coloured and less parallel, with the head broader and the eyes more prominent. The coloration, however, is variable and it is possible there may be two species mixed, but I am unable to separate them.

35. **Tettigonia lugubris.** (Tab. XVI. fig. 7.)

Tettigonia lugubris, Sign. Ann. Soc. Ent. Fr. 1854, p. 13, t. 1. fig. 13[1].

Hab. Mexico[1] (*Mus. Vind. Cæs. & Mus. Holm.*), Mexico city (*H. H. Smith*).

The ground-colour of this species varies from black to greyish-green. The broad white or light band following the line of the claval suture will distinguish *T. lugubris* from most of the allied forms.

A dark specimen from the neighbourhood of the city of Mexico is figured.

36. **Tettigonia separanda,** sp. n. (Tab. XVI. fig. 8.)

Præcedenti valde affinis, sed capite multo magis producto, regulariter triangulari, oculisque vix prominulis distinguenda.

Closely allied to *T. lugubris*, but with the head longer and more regularly triangular and differently marked, the eyes less prominent and fitting more closely into the sides of the head; the colouring and marking are also somewhat different (but this is very variable in different specimens of *T. lugubris*); the tegmina are dark, with a broad light band at the claval suture, as in the preceding species.

Long. 6 millim.; lat. ad hum. vix 2 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Several specimens.

37. **Tettigonia semirasa,** sp. n. (Tab. XVI. fig. 9.)

Sat robusta, postice sensim angustata, nitida, antice nigro-brunnea vel brunnea, postice brunnea, minute testaceo albidoque variegata; capite producto, triangulari, obtuse rotundato, oculis prominulis; metopidio testaceo, transversim nigro-lineato; pronoto levissime sed distincte sculpturato, lateribus fere parallelis, postice leviter sinuato; scutello maculis duabus albidis variantibus, alterâ ad basim, alterâque ad apicem, interdum deficientibus, instructis; tegminibus a tertiâ parte basali usque ad apicem albidis dense et minute irroratis, duabus utrinque notis immaculatis, alterâ suturam attingenti alterâque pone hanc sitâ conspicuis; abdomine rufo vel nigro-fusco; pedibus testaceis.

Shining, gradually narrowed behind, black or brownish-black in front, the tegmina brown; head triangular, produced, with the eyes a little prominent, finely sculptured, with minute lighter markings, the metopidium with transverse testaceous dark and light lines; pronotum finely rugose transversely, with obscure small testaceous markings, very slightly sinuate at the base; scutellum black, distinctly roughened in the middle, with two testaceous spots, one towards the base and one behind, sometimes one and sometimes both being absent; tegmina very finely but distinctly sculptured, with the hinder two-thirds thickly and sometimes obscurely sprinkled with minute greyish spots, which are absent from two large patches reaching nearly or quite to the suture, one a little behind the middle and one beyond this; wings fuscous; abdomen red or fuscous-black; underside of the body and legs testaceous, the latter having the upperside of the anterior and intermediate tibiæ more or less infuscate, and usually a black spot on the anterior femora.

Long. 8 millim.; lat. ad hum. 2–2½ millim.

Hab. Mexico, Amula, Chilpancingo, and Omilteme in Guerrero, Cuernavaca in Morelos (*H. H. Smith*).

A specimen from Chilpancingo is figured.

38. **Tettigonia aphrophoroides,** sp. n. (Tab. XVI. fig. 10.)

Sat brevis, antice et postice angustata, testacea vel viridi-testacea; capite producto, triangulari, oculis vix prominulis; pronoto antice leviter angustato, basi late sinuatâ, plus minusve distincte transversim rugoso; scutello sat magno; tegminibus maculis duabus magnis brunneis, ad marginem colore dilutiori cinctis, fere totum spatium corii obtinentibus, vel totis immaculatis; corpore subtus pedibusque testaceis.

A rather short species, broadest about the middle and narrowed towards either end, very like a small *Aphrophora*, of a testaceous or greenish-testaceous colour, with the head strongly produced and triangular, and the eyes scarcely prominent; the central portion of the head is broadly and very shallowly impressed and on either side are more or less distinct small brown markings; pronotum finely rugose, sinuate broadly at the base, with a few irregular dark markings, one or two at the base (meeting two at the base of the scutellum) being most conspicuous, but these are all variable; tegmina lighter or darker, with a small dark spot on the anterior margin, or two large dark brown spots at the sides edged with lighter colour and occupying most of the corium; abdomen and underside yellow or testaceous-yellow; legs testaceous, with the apex of the tibiæ and the tarsi pitchy.

Long. 8 millim.; lat. ad hum. vix 3 millim.

Hab. Mexico, Xucumanatlan, Omilteme, and Sierra de las Aguas Escondidas in Guerrero 7000 to 9500 feet (*H. H. Smith*).

The differences in colour are not sexual.

39. **Tettigonia cervina,** sp. n. (Tab. XVI. fig. 11.)

Sat robusta, dilute castanea, testaceo-variegata; capite triangulari, acute producto, oculis vix prominulis; pronoto lateribus vix antice angustatis; scutello testaceo, unicolori; tegminibus postice sensim angustatis, sex maculis magnis dilute testaceis, interdum plus minusve confluentibus vel ad partem deficientibus; abdomine supra flavo-rufo, corpore subtus et pedibus testaceis.

Comparatively short and broad, narrowed in front and behind, broadest at about the middle, in shape like a small *Aphrophora*; of a light chestnut or reddish-brown colour, with the central part of the vertex, the greater part of the disc of the pronotum, the scutellum, and three spots on each tegmen light testaceous, the spots being sometimes very distinct and sometimes confluent and obscure; head triangular, rather long, pointed, eyes scarcely prominent; pronotum somewhat shining, with slight but distinct rugose sculpture; tegmina gradually and considerably narrowed to the apex, the apex not hyaline; underside yellow-testaceous; legs testaceous, sometimes suffused with brownish.

Long. 6 millim.; lat. ad hum. vix 2 millim.

Hab. Guatemala, Cerro Zunil 4000 feet (*Champion*).

40. **Tettigonia albidonotata,** sp. n. (Tab. XVI. fig. 12.)

Oblonga, rufa, notis parvis albidis regulariter maculata; capite brevi vix ante oculos producto, lato, oculis prominentibus; pronoto levissime transversim rugoso, basi leviter sinuatâ; tegminibus apice dilutiori; alis fumosis; corpore subtus rufo, antice nigrescente, albido ad latera notato; pedibus rufis, tarsis piceis.

Crimson-red, with small white spots arranged regularly more or less in rows over the whole upper surface, three on the vertex, four arranged transversely on the pronotum, and about sixteen more arranged in rows across the tegmina being most conspicuous; apparently in fresh specimens minute white scales are dotted over part of the surface; head broad, short, very obtusely angled, eyes prominent; pronotum narrowed in front, with the base slightly sinuate before the scutellum, the markings on the latter somewhat variable; tegmina lighter subhyaline at the apex; wings smoky; underside of the abdomen red, of the front parts darker, marked with whitish or yellowish at the sides; legs red, tarsi more or less pitchy.

Long. 8–9 millim.; lat. ad hum. 2–2½ millim.

Hab. Panama, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).

This is a very easily recognized and pretty species; it is allied to *T. ståli*, and is quite distinct from *T. albomaculata*, Dist., which is somewhat similarly coloured.

A specimen from Bugaba is figured.

41. **Tettigonia testudinaria,** sp. n. (Tab. XVI. fig. 13.)

Nigra, testaceo vel viridescenti-testaceo regulariter marmorata; capite lato, brevi, rotundato, haud producto, oculis magnis prominentibus; metopidio nigro-cincto ad medium duabus lineis instructo; pronoto capite cum oculis distincte angustiori, lævi; scutello postice testaceo; tegminibus apice hyalino, lævibus; alis fumatis; abdomine supra rufo, subtus rufo-flavo; pectore cum pedibus dilute testaceis.

Smooth and shining, upperside dark, regularly marbled throughout with testaceous or greenish-testaceous, the front markings being the most pronounced and distinct; head very short, broad, rounded, with prominent eyes, distinctly broader than the pronotum, which is rather short and not sinuate at the base; scutellum testaceous behind; tegmina hyaline at the apex, the transparent part being sometimes obscured by the smoky wings, smooth; abdomen red above, orange beneath; chest and legs light testaceous, the former with one or two dark markings in front; size variable.

Long. 6–8 millim.; lat. ad hum. $1\frac{1}{2}$–2 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui, Caldera, and Peña Blanca (*Champion*).

The markings of the tegmina are probably as bright in life as those on the front part of the upper surface, but in several specimens they are faded; this appears to be sometimes caused in the group through the action of the juices of the abdomen, but the effect is not nearly so great on the whole as might be expected from the delicacy of the integument, the colours being in most species retained with at all events something of their pristine brilliancy.

A specimen from the Volcan de Chiriqui is figured.

42. **Tettigonia redundans,** sp. n. (Tab. XVI. fig. 14.)

Præcedenti affinis, sed multo magis nitida, capite latiori oculisque magis prominulis; castanea vel fusca, maculis albidis plus minusve regularibus notata, apice tegminum hyalino; abdomine rufo; sterno pedibusque dilute testaceis, illo fusco-notato, his interdum fusco-variegatis.

Castaneous-brown, front parts more or less black, shining; head short, rounded, with very prominent eyes, which project considerably beyond the sides of the pronotum; metopidium black, with three testaceous bands; head with a white spot in the centre and one on each side on a depression behind the eyes, and three or four small spots at the base; pronotum short, convex, shining, with three spots arranged transversely; scutellum with a spot before the apex whitish-testaceous; tegmina gradually narrowed behind, with about seven rounded or elongate whitish or bluish-white patches on each, of which three or four are most conspicuous, and in mature specimens are surrounded with a ring of darker colour; abdomen red, front part of the underside whitish-testaceous, marked more or less with fuscous; legs testaceous, sometimes marked with darker colour, or with at least the apex of the tibiæ and the tarsi infuscate.

Long. 6–7 millim.; lat. ad hum. vix 2 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Cahabon in Vera Paz, San Isidro, Pantaleon (*Champion*).

We figure a specimen from Cahabon.

43. **Tettigonia velutina,** sp. n. (Tab. XVI. fig. 15.)

Subparallela, varians, fusca vel fusco-brunnea, testaceo, griseo, et albido irrorata et variegata; capite brevi, vix producto, perobtuse rotundato angulato, oculis magnis prominentibus; pronoto capite distincte longiori,

antice dilutiori; scutello testaceo, brunneo figurato; tegminibus variantibus brunneis vel brunneo-nigris griseo notatis; abdomine supra rufo, corpore subtus et pedibus flavescentibus.

Subparallel, velvety-fuscous or fuscous-brown, more or less minutely variegated with testaceous, grey, and whitish colours; head short, scarcely produced, but angled in front, though very broadly; metopidium and vertex testaceous, variegated with fuscous; eyes large and prominent, extending considerably beyond the sides of the pronotum; pronotum distinctly longer than the head, lighter in front, and with or without a lighter longitudinal line in the centre of the disc; scutellum testaceous, figured with brown; tegmina variable in colour, dark fuscous or brown with grey or whitish markings; abdomen crimson above; underside and legs yellowish or brownish-yellow.

Long. 7 millim.; lat. ad hum. 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

44. **Tettigonia congruens,** sp. n. (Tab. XVI. fig. 16.)

Fusco-brunnea, haud nitida, maculis testaceis plus minusve rotundatis (interdum in capite et pronoto confluentibus) regulariter notata; capite brevi, lato, oculis prominulis; pronoto brevi, maculis quinque testaceis transversim dispositis; scutello testaceo-notato; tegminibus maculis viginti instructis; corpore subtus fusco testaceo-notato; pedibus testaceis, fusco annulatis vel maculatis.

Of a fuscous-brown colour, rather robust, dull, regularly marked with more or less rounded testaceous spots, of which there are three on the head, five on the pronotum, one or two on the scutellum, and ten on each of the tegmina, those on the head and pronotum being sometimes confluent; head very short, broad, with prominent eyes, behind each of which there is an elongate depression, broadly rounded and almost subtruncate in front; pronotum short, but longer than the head, with fine transversely rugose sculpture; tegmina narrowed for about their apical third part; underside more or less fuscous; legs testaceous, ringed or marked with fuscous.

Long. 6 millim.; lat. ad hum. vix 2 millim.

Hab. PANAMA, Bugaba and Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

The specimen figured is from the Volcan de Chiriqui.

45. **Tettigonia amulæ,** sp. n. (Tab. XVI. fig. 17.)

Brevis, sat robusta, antice nigra albido irrorata; capite modice producto, perobtuse rotundato-angulato, oculis prominulis; pronoto lateribus fere parallelis; scutello magno; tegminibus fusco-cupreis, griseo dense sat minute irroratis; abdomine flavo-rufescenti; sterno testaceo; pedibus testaceis, plus minusve fuscatis.

A short and somewhat robust species; head moderately produced, broadly angled, with the eyes rather prominent, blunt, with whitish marks and dashes; pronotum a little longer than the head, almost parallel-sided, with a central line and a number of small spots on each side whitish; scutellum large, with whitish apex and spots; tegmina fuscous, with a coppery reflection, regularly dotted with closely-set greyish spots; abdomen orange; sternum testaceous; legs testaceous, more or less marked with fuscous.

Long. 5 millim.; lat. ad hum. $1\frac{1}{3}$ millim.

Hab. MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

This species in some points resembles *T. lugubris*, from which, however, it is quite distinct.

46. **Tettigonia blanchardi.**

Tettigonia blanchardii, Sign. Ann. Soc. Ent. Fr. 1855, p. 788, t. 24. fig. 6[1].

Hab. MEXICO, Orizaba (*Bilimek, in Mus. Vind. Cæs.*); GUATEMALA [1].

One of the Mexican specimens in the Vienna Museum is labelled as presented by Signoret, but neither of them agrees with his figure satisfactorily.

47. **Tettigonia sirena.** (Tab. XVI. fig. 18.)

Tettigonia sirena, Stål, Stett. ent. Zeit. xxv. p. 76[1].

Hab. Mexico (*Mus. Holm.*[1] *& Mus. Vind. Cæs.*).

This species is rather closely related to the preceding, and both are akin to *T. ståli*; neither of them appears to be represented in our collection.

A specimen from the Vienna Museum is figured.

48. **Tettigonia albomaculata.** (Tab. XVI. fig. 19.)

Tettigonia albomaculata, Distant, Ent. Monthly Mag. xvi. p. 62[1].

Hab. Costa Rica, Rio Sucio and Volcan de Irazu 6000 to 7000 feet (*Rogers*[1]).

In this species the head and pronotum are black, and the tegmina are red, with a number of distinct white spots; the head is only a little produced before the eyes, and is broadly and regularly rounded in front.

A specimen from Rio Sucio is figured.

49. **Tettigonia tripunctata.**

Tettigonia tripunctata, Fitch, Fourth Ann. Report State Cab. Nat. Hist. p. 55 (1851)[1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 23, t. 2. fig. 12[2].
Tettigonia nigrifascia, Walk. List of Homopt. Ins. iii. p. 776[3].
Tettigonia pallida, Walk. loc. cit. p. 776[4].
Tettigonia albida, Walk. loc. cit. p. 777[5].

Hab. North America, New York[1].—Mexico[2–5] (*Mus. Vind. Cæs.*; *Boucard, in Mus. Holm.*), Omilteme in Guerrero, Cuernavaca in Morelos (*H. H. Smith*), Guanajuato (*E. Dugès, in Mus. Roy. Belg.*), Orizaba (*Bilimek, H. H. Smith, & F. D. Godman*); Guatemala, Quezaltenango 7800 feet, Dueñas (*Champion*).

This species varies considerably in colour and to a certain extent in the markings. It may be known from its allies by the very short head, which is scarcely produced before the eyes and is rounded in a very obtuse angle; the ground-colour is either reddish, greyish-brown, or yellowish-white. There is an insect in our collection from Mexico city which appears to be a variety of this species, but it has the head and pronotum covered with large black spots and markings; I cannot, however, separate it structurally.

50. **Tettigonia uniguttata.**

Tettigonia uniguttata, Walk. List of Hompt. Ins. iii. p. 778[1].

Hab. Mexico[1].

This species differs from the preceding chiefly in having the head more conical, the vertex flatter, and the sculpture of the pronotum less evident; the head, pronotum,

and tegmina are entirely testaceous, with the exception of a black spot on the front of the vertex: Signoret at first treated it as a variety of the preceding, but afterwards separated it. I am inclined to think that *T. uniguttata* is a colourless or immature variety of the preceding species.

51. **Tettigonia præstantior,** sp. n. (Tab. XVI. fig. 20.)

Major, postice latior, capite producto, nigro, subexcavato, oculis sat elongatis; pronoto antice nigro postice læte flavescenti, leviter rugoso; scutello nigro; tegminibus lævibus, haud nitidis, basi et apice vittâque pone medium nigris, spatio intra vittam basalem et intermediam læte flavo, spatio post hanc flavo-rufo; corpore subtus plerumque testaceo; pedibus testaceis ad partem piceis.

A large, brightly-coloured species, with strongly contrasted black, yellow, and orange bands, the former having a cyaneous reflection in certain lights; head long, produced in an isosceles triangle, with the sides slightly rounded and bluntly angled at the apex, entirely black, except for a small portion of the metopidium above the rostrum—if viewed from the side, subexcavate, sharply pointed, and slightly deflexed; pronotum bright yellow, with the front part abruptly black, finely rugose; scutellum large, black; tegmina dull, smooth, with a black band at the base (forming with the scutellum, which it includes, a broad black band right across the body of the insect); a long yellow space behind this, and a broad black band just behind the middle, followed by a bright orange space before the apex, which is black; underside mostly testaceous, fuscous towards the apex of the abdomen; legs testaceous, more or less pitchy.

Long. 14–15 millim.; lat. ad hum. $3\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

A considerable series. This is one of the most gaudily coloured and conspicuous insects of the whole group; it appears to be extremely local.

52. **Tettigonia undecimmaculata,** sp. n. (Tab. XVI. fig. 21.)

Quoad staturam præcedenti affinis, sed capite breviori, oculis magis prominulis; testacea, capite nigro-notato, pronoto maculis tribus testaceis; tegminibus lævibus, sat nitidis, maculis octo conspicuis, duabus ad basim, quatuor ad medium, duabusque ante apicem instructis; corpore subtus pedibusque dilute testaceis.

Upperside fusco-testaceous, with black markings on the head and three light testaceous spots on the pronotum; head triangular, depressed, with the sides towards the front raised in a ridge on each side; tegmina smooth and rather shining, with two large round testaceous spots at the base, four in a line just behind the middle, the two inner ones being smaller and not rounded, and two large and conspicuous round spots at the apex; underside and legs light testaceous.

Long. 13 millim.; lat. ad hum. 3 millim.

Hab. Panama, Volcan de Chiriqui 3000 feet (*Champion*).

The specimen on which I have described this species appears to be somewhat immature, and the colour is probably darker as a rule, but the eight large and conspicuous spots on the tegmina render the insect so easily recognizable that I have thought it best not to pass it over.

53. **Tettigonia feralis,** sp. n. (Tab. XVI. fig. 22, ♂.)

Fusco-nigra, capite magno, triangulariter producto; pronoto lævissime sculpturato, lateribus fere parallelis, basi vix sinuatâ; scutello magno; tegminibus lævibus, venis distinctis.

Mas, minor et angustior, magis nitidus, capite magis excavato, oculis prominulis; tegminibus lævioribus, apice extremo subhyalino; vertice ad apicem, metopidio et pedibus læte rufo-flavis; corpore subtus albido-testaceo.

Femina, major et latior, minus nitida, capite minus excavato, oculis minus prominulis; tegminibus vix nitidis, apice subhyalino; corpore subtus flavescenti, abdomine ad medium subnigro; pedibus piceis.

Black or fuscous-black, with the head triangularly produced, the pronotum very finely sculptured and its base very gently sinuate; tegmina smooth, with distinct veins, the two claval veins being parallel and distant.

Male smaller, narrower, and more shining, with the extreme front of the vertex, metopidium, and legs bright orange, and the underside light testaceous-yellow or whitish-testaceous; head more excavate and more plainly ridged at the sides and front, with the ridging distinctly rugose, and with a fine central furrow; tegmina smoother and more shining, with the extreme apical margin subhyaline.

Female larger, broader, and duller, with the upper surface more fuscous, the metopidium (except in front) and the underside yellowish, except the central part of the abdomen, which is pitchy; head less excavate and less plainly ridged, eyes less prominent; tegmina with the apex more broadly hyaline.

Long. ♂, 11 millim., lat. ad hum. 3 millim.; ♀, long. 12 millim., lat. ad hum. $3\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

I at first described these as two species, but I believe that they are sexes of one only, as I can find no tangible point of difference between them, and they both come from the same locality.

54. **Tettigonia fractilinea,** sp. n. (Tab. XVI. fig. 23.)

Elongata, angusta, capite producto, antice obtuse rotundato, nigro, metopidio testaceo, vertice ad medium impresso vel leviter sulcato; pronoto nigro, leviter sculpturato; scutello magno, nigro; tegminibus longis, flavo-rufis, subtiliter punctatis, suturâ clavali, lineâ obliquâ pone medium marginem attingente, et apice nigris; corpore subtus rufescenti; pedibus piceis, femoribus plus minusve rufis.

An elongate narrow species, black, with the tegmina orange, or with the front parts orange-testaceous and the apical parts a bright orange: the line bounding the clavus, the apex, the suture from the apex to the clavus, an oblique line behind the middle touching the margin, and the margin itself for part of its length very narrowly, are black; head produced, rounded obtusely in front, with the vertex impressed or sulcate in the middle, black, with the metopidium and a faint line on the vertex testaceous; pronotum and scutellum finely sculptured; tegmina very finely and closely punctured; underside reddish; legs pitchy, femora rufescent; a small light spot is often present near the margin between the dark apex and the orange ground-colour of the succeeding portion of the tegmina.

Long. 10–11 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Panama, Bugaba and Volcan de Chiriqui (*Champion*).

We figure a specimen from Bugaba.

55. **Tettigonia notanda,** sp. n. (Tab. XVI. fig. 24.)

Elongata, parallela, angusta; supra nigra, subtus fusco-testacea, capite triangulari, parvo, pronoto distincte angustiori, ad medium longitudinaliter impresso, oculis vix prominulis; pronoto antice angustato, fere lævi; tegminibus levissime sculpturatis, vittâ longitudinali et quartâ parte apicali sanguineâ, apice extremo nigro; abdomine subtus apicem versus rufescenti; pedibus fusco-testaceis, tarsis plus minusve fuscatis.

Elongate and parallel, black above, underside fusco-testaceous, abdomen beneath reddish towards the apex; head small, triangular, with the eyes only a little prominent, distinctly narrower than the pronotum; metopidium testaceous, vertex longitudinally impressed; pronotum narrowed in front; tegmina very

finely sculptured, with a longitudinal red band extending from near the shoulder to beyond the middle, and a short band at the base just inside this, apical fourth part red, variegated at the margin with two or three small hyaline spots and with a black oblique dash in front and a black spot at the extreme apex; legs fusco-testaceous, tarsi more or less dark.

Long. 11 millim.; lat. 2 millim.

Hab. Panama (*Boucard, in Mus. Holm.*).

This species is somewhat closely allied to *T. fractilinea*, but has a more regularly triangular and more pointed head, and is quite differently coloured.

56. **Tettigonia erumpens,** sp. n. (Tab. XVI. fig. 25.)

Flava, maculis parvis flavis rotundis remotius sparsa; capite brevi, antice late rotundato, oculis prominulis; pronoto lævi, nitido, lateribus antice angustatis, basi haud sinuatâ; scutello lævi; tegminibus haud nitidis vix sculpturatis; alis lacteis, opacis, venis rufescentibus; corpore subtus pedibusque testaceis.

Orange-yellow, with the front parts sometimes darker orange, sometimes light testaceous, thickly but not very closely sprinkled with little round spots, which are almost concolorous with the ground-colour, and are more evident in some examples than in others; head short, narrower than the pronotum, broadly rounded, eyes prominent; pronotum broader at the base than at the apex, with the base straight or almost straight, smooth; tegmina usually quite dull, sometimes in part slightly shining, smooth; wings opaque, milky-white, with reddish veins; underside and legs testaceous.

Long. 13 millim.; lat. ad hum. 3 millim.

Hab. Guatemala, El Tumbador, Cerro Zunil, Mirandilla, Capetillo (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).

This species is somewhat variable; the concolorous spots are in some examples scarcely apparent, and in others very distinct, and some specimens are rather darker with darker and plainer venation.

The specimen figured is from Mirandilla.

57. **Tettigonia spectralis,** sp. n. (Tab. XVI. fig. 26.)

Quoad staturam et formam præcedenti affinis, capite pronotoque roseis, albido-notatis, illo brevi, parvo, hoc antice angustato, basi haud sinuatâ, levissime sculpturato; scutello albido, rufo-notato; tegminibus albidis, margine antico et maculâ elongatâ ad basim duabusque parvis ad humeros utrinque roseis; alis lacteis, opacis; corpore subtus pedibusque albidis, interdum plus minusve piceis; abdomine roseo.

In size and form closely resembling the preceding (*T. erumpens*), white, with the head and pronotum, the front of the metopidium, the margins of the tegmina from the middle to the base, an elongate spot towards the base of the latter, followed by two small spots at the shoulders, and the abdomen, rose-red; upper surface dull, scarcely visibly sculptured; head small and short; pronotum narrow in front, the base nearly straight before the scutellum; wings opaque, milky-white, with reddish veins; legs whitish or more or less pitchy.

Long. 13 millim.; lat. ad hum. 3 millim.

Hab. Guatemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

Like the preceding, this species varies somewhat in colour, the tegmina being sometimes of a dirty-white colour, with the veins and margins darker; this may be partly, though not altogether, due to discoloration.

58. **Tettigonia bilineata,** sp. n. (Tab. XVI. fig. 27.)

Aurea, lævis, nitida, capite fere semicirculari, maculâ nigrâ inter ocellos nigros rotundatâ vel cordiformi, oculis nigris vix prominulis; pronoto antice angustato, basi fere rectâ; scutello magno, concolori; tegminibus vittâ angustâ nigrâ curvatâ, scutellum attingente, et aliâ pone medium latiori instructis; abdomine flavo-rufo; pedibus dilute testaceis.

Golden-yellow, smooth, and shining, with the ocelli and a rather large round or heart-shaped spot between them, the eyes, which are scarcely prominent, and two bands on each tegmen, black; of the latter, the front ones reach the scutellum and extend in a curve to the costal margin, along which they are continued to near the middle of the tegmina; the hinder ones meet at the suture and form a straight, but more or less irregular band across the upper surface behind the middle; head rounded, nearly semicircular; pronotum narrowed in front; abdomen above orange-coloured; underside and legs light testaceous or rufo-testaceous.

Long. 10 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Mexico, Amula, Venta de Peregrino, Acaguizotla, and Rincon, all in Guerrero (*H. H. Smith*).

We figure a specimen from Amula.

59. **Tettigonia tæniata,** sp. n. (Tab. XVI. fig. 28.)

Aurea, nitida, lævis, vittis duabus latis cyaneo-nigris; capite lato, quadratim rotundato, vel fere semicirculari; ocellis et oculis nigris, his nonnihil prominentibus; corpore subtus pedibusque rufo-flavis; apice abdominis late, femoribus anticis superne cum tarsis, unguibusque intermediis et posticis nigris.

Of a bright golden colour, smooth, and shining, with two broad velvety cyaneous-black bands extending across the upper surface, the front one including the base of the pronotum, the scutellum, and the basal part of the tegmina, and the hinder one just before the apex, which is yellow; the apex of the abdomen is broadly black, and the upper surface of the front tibiæ, the front tarsi, and the intermediate and posterior claws are black.

Long. 11 millim.; lat. ad hum. 3 millim.

Hab. Panama, Bugaba (*Champion*).

60. **Tettigonia distinguenda,** sp. n. (Tab. XVI. fig. 29.)

Præcedenti affinis, sed capite ad basim pronotoque ad apicem cyaneo-nigris, hoc parte basali flavescenti et tegminibus vittâ latâ ad basim scutellum includente nigrâ, alterâque apicem fere attingenti maculâ flavâ triangulari profunde indentatâ instructis, distinguenda.

Very like the preceding, of which it may possibly be a variety, but easily distinguished by the base of the head and front of the pronotum being black, as well as by the basal part of pronotum being yellow, and the apical band on the tegmina nearly reaching the apex, and being almost divided by a triangular yellow patch, the base of which rests on the margin.

Long. 11 millim.; lat. ad hum. 3 millim.

Hab. Panama (*Boucard*).

61. **Tettigonia ostrina,** sp. n. (Tab. XVI. fig. 30.)

Elongata, angusta, purpureo-rufa; capite pronotoque plus minusve dilutioribus, rufis vel rufo-flavis, illo sat producto obtuse rotundato, oculis prominulis, hoc convexo, lævi, antice angustato, basi leviter late sinuatâ; tegminibus lævibus sat nitidis, margine obscuriori, apice abrupte hyalino; abdomine supra rufo; corpore subtus pedibusque testaceis.

Elongate, narrow, of a purplish-red colour, with the head and pronotum more or less rufous or orange-coloured;

head somewhat produced, obtusely rounded, eyes rather prominent; pronotum convex, smooth, narrowed in front, broadly and very gently sinuate at the base; tegmina smooth, rather shining, with the margins darker, and the apex abruptly hyaline; abdomen red above; underside of the body and legs testaceous.

Long. 11 millim.; lat. ad hum. vix 3 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

62. **Tettigonia rufofasciata.** (Tab. XVII. fig. 1.)

Tettigonia rufofasciata, Distant, Ent. Monthly Mag. xvi. p. 63[1].

Hab. Costa Rica, Caché (*Rogers*[1]).

This species is closely allied to the preceding, but may easily be known from it by the fasciæ on the tegmina, as well as by the yellow margins of the latter, and the testaceous head and pronotum, on the former of which there is a large dark spot between the ocelli, and on the latter two black spots towards the apical margin.

63. **Tettigonia detracta,** sp. n. (Tab. XVII. fig. 2.)

Præcedenti affinis; capite pronotoque testaceis, illo vertice rotundato, sat producto, maculâ parvâ anticâ, ocellis et oculis prominulis nigris, hoc convexo, lævi, punctis duobus nigris ante apicem; scutello obscure rufo; tegminibus griseis vel rufo-griseis, vittâ ad basim nigrescenti, duabus aliis alterâ pone medium latiori, alterâ ad apicem rufis, apice hyalino; corpore subtus pedibusque flavis vel testaceis.

Allied in size and shape to the preceding (*T. rufofasciata*), with the head and pronotum testaceous, the former somewhat produced and rounded, with a black spot on the tip of the vertex and a dark marking in the centre of the base; eyes prominent; pronotum testaceous, with two small black spots in front and a small dark marking in the middle of the base, convex, smooth, slightly rounded in front; scutellum dark red; tegmina with a dark band on each at the base, forming with the scutellum a dark band across the upper surface, and with two bands besides—one behind the middle broader and one before the apex narrower—red, much lighter than the basal band; legs and underside testaceous-reddish or testaceous.

Long. 10 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

One of our specimens has the ground-colour of the upper surface griseous; this may be due to discoloration, but the insect looks like a distinct variety.

64. **Tettigonia scutellata.** (Tab. XVII. fig. 3.)

Tettigonia scutellata, Distant, Ent. Monthly Mag. xvi. p. 62[1].

Hab. Costa Rica, Rio Sucio and Volcan de Irazu 6000 to 7000 feet (*Rogers*[1]).

This species is allied to *T. rufofasciata*, but it is smaller and narrower; the front parts are yellow and the tegmina rose-red, and the insect may be known by the two distinct black spots on the scutellum; there is, further, a rather large black spot on the vertex of the head and two smaller black spots on the pronotum.

The specimen figured is from the Rio Sucio.

65. **Tettigonia trivirgata,** sp. n. (Tab. XVII. fig. 4.)

Elongata, parallela, purpureo-rufa; capite nigro antice miniato, triangulari, modice producto, oculis sat prominulis; fronte nigrâ; pronoto virgis tribus longitudinalibus læte miniatis; scutello magno; tegminibus maculis vel lineis quibusdam obscuris fusco-purpureis; corpore subtus pedibusque dilute testaceis.

Purple-red; head deep black, with the front part scarlet and the extreme apex with two black spots (which, if viewed from the front, form the upper portion of the black frons), short, triangular, moderately produced before the eyes, which are rather prominent; pronotum with three distinct, broad, scarlet, longitudinal bands; scutellum large; tegmina with the margins united a little before the apex, and a more or less elongate patch on each side of the suture obscurely fuscous-purple; underside and legs light testaceous.

Long. 8 millim.; lat. ad hum. vix 2 millim.

Hab. PANAMA, Bugaba and Volcan de Chiriqui (*Champion*).

This is a very distinct and pretty species, which may be known at once by the three scarlet bands on the pronotum.

We figure a specimen from Bugaba.

66. **Tettigonia purpurascens,** sp. n. (Tab. XVII. fig. 5.)

Elongata, parallela, purpureo-rufa, purpureo-fusco indistincte maculata; capite triangulari, ante oculos sat prominulos producto, late longitudinaliter sulcato; pronoto convexo, lateribus antice angustatis; tegminibus ad latera ante apicem maculis duabus parvis albidis, ad apicem ipsum hyalinis; corpore subtus pedibusque flavo-albidis, abdominis apice rufescenti.

Of a deep purple-red colour, with obscure lines of dark purple on the head and pronotum and spots of the same colour on the tegmina; head triangular, produced before the eyes; vertex broadly sulcate; metopidium light whitish-yellow; pronotum convex, with the sides gradually narrowed in front; scutellum large, somewhat raised behind; tegmina smooth, rather shiny, with two small white spots on each before the apex touching the margins, and the apex itself hyaline, fuscous at the sides; front portion of the underside and legs whitish-yellow.

Long. 8 millim.; lat. ad hum. 2 millim.

Hab. GUATEMALA, Cerro Zunil, Volcan de Atitlan (*Champion*).

The specimen figured is from the Volcan de Atitlan. Both localities are on the Pacific slope.

67. **Tettigonia costaricensis.** (Tab. XVII. fig. 6.)

Tettigonia costaricensis, Distant, Ent. Monthly Mag. xvi. p. 63 [1].

Hab. COSTA RICA, Rio Sucio and Volcan de Irazu 6000 to 7000 feet (*Rogers* [1]); PANAMA (*Boucard*).

This species may at once be known by its entirely black colour, with the exception of an orange band, which, including the pronotum (except just the front portion), encircles the whole body.

The specimen figured is from Panama.

68. **Tettigonia rubricollis,** sp. n. (Tab. XVII. fig. 7.)

Nigra, lævis; pronoto antice, pectore et pedibus læte miniatis vel rufo-flavis; capite modice producto late rotundato, impresso, oculis prominulis; pronoto lateribus vix antice angustatis, basi fere rectâ; alis fuscatis.

Deep black, smooth, with the front part of the pronotum, except just at the apex, bright yellow-red or scarlet, and the hinder portion abruptly black, the line of demarcation between the two colours forming an angle in the centre; chest, except the sides, and legs bright yellow-red; head moderately produced, transversely impressed, broadly rounded in front, with the eyes rather prominent; pronotum with the sides slightly narrowed in front and the base nearly straight; tegmina without noticeable sculpture, unicolorous black to the apex; wings almost as dark as the tegmina.
Long. 8 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Omilteme and Xucumanatlan in Guerrero 7000 to 8000 feet (*H. H. Smith*).

This insect bears a considerable resemblance to a small moth, *Lithosia rubricollis*. Superficially it is somewhat like *Tettigonia costaricensis*, Distant, but may easily be known by its smaller size, differently shaped head, and red legs; in *T. costaricensis*, moreover, the pronotum is entirely yellow or reddish-yellow, except a small part of the anterior margin.

We figure a specimen from Xucumanatlan.

69. **Tettigonia pulchella.** (Tab. XVII. figg. 8; 9, var. *proxima*).

Tettigonia pulchella, Guér. Icon. Règne Anim., Ins. p. 369, t. 59. fig. 10[1]; Walk. List of Homopt. Ins. iii. p. 736[2]; Sign. Ann. Soc. Ent. Fr. 1853, p. 360, t. 11. fig. 11[3].
Tettigonia proxima, Sign. loc. cit. p. 361, t. 11. fig. 12[4].

Hab. Mexico[1 2 3] (*Sallé; Mus. Vind. Cæs.; Mus. Roy. Belg.; Mus. Holm.*), Tierra Colorada and Acapulco in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Orizaba (*F. D. Godman & H. H. Smith*), San Lorenzo, Cordova (*M. Trujillo*), Temax in N. Yucatan (*Gaumer*); Guatemala, near the city, Capetillo (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Venezuela[2], La Guayra[4].

This common species appears to vary considerably in colour; and *T. proxima*, Sign., seems to be nothing more than a variety of it. Signoret himself is doubtful on the point (*l. c.* p. 361).

We figure a specimen of the ordinary form and one of the var. *proxima*, both from Mexico.

70. **Tettigonia flavoguttata.** (Tab. XVII. fig. 10.)

Tettigonia flavoguttata, Latr. in Humb. & Bonpl. Obs. Zool. i. p. 171, t. 16. fig. 12[1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 356, t. 12. fig. 6[2].

Hab. Mexico, Acapulco[1]; Nicaragua, Chontales (*Janson*); Panama (*Boucard*), Bugaba, David, and Caldera in Chiriqui (*Champion*).—Brazil[2].

This insect appears to be locally abundant in various places in Central America.

Signoret [2] notes the fact that Latreille has given the length of the insect wrong in his description—24 millim. instead of 11 millim.

A specimen from David is figured.

71. **Tettigonia areolata.** (Tab. XVII. fig. 11.)

Tettigonia areolata, Sign. Ann. Soc. Ent. Fr. 1853, p. 355, t. 11. fig. 4 [1].

Hab. MEXICO [1] (*Sallé*), Chilpancingo, Tierra Colorada, Dos Arroyos, and La Venta in Guerrero, Teapa in Tabasco (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*), San Lorenzo, Cordova (*M. Trujillo*), Temax in N. Yucatan (*Gaumer*); GUATEMALA, San Gerónimo (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Caché and Volcan de Irazu (*Rogers*), Candelaria Mts. (*Underwood*).

Signoret's figure of this species, as of several others more or less allied to it, is very poor and hardly recognizable; it is for this reason that we have thought it best to give fresh ones.

The specimen figured is from Tierra Colorada.

72. **Tettigonia collata,** sp. n. (Tab. XVII. fig. 12.)

Quoad staturam faciemque *T. areolatæ* affinis; capite brevi, subtriangulari; metopidio rufo-flavo, brunneo-marginato; vertice antice rufo-flavo, postice nigro-brunneo vel brunneo; pronoto dilute flavo, marginibus anticis et posticis brunneis; tegminibus rufo-brunneis, maculis tribus utrinque dilute flavis vel albido-flavis; pedibus albido-flavescentibus.

Of about the size and shape of *T. areolata*; head short, subtriangular; metopidium orange, bordered with brown; vertex with the anterior half orange and the posterior half dark brown; pronotum light yellow, with the anterior and posterior margins dark brown; tegmina reddish-brown, with three light yellow patches on each, two large ones meeting behind the scutellum and not quite touching the margins, two just behind the middle forming a transverse band across the upper surface, and one smaller one on each side near the margin just before the apex, the apex not hyaline; legs very light yellow.

Long. 7 millim.; lat. ad hum. vix 2 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

73. **Tettigonia laudata.** (Tab. XVII. fig. 13.)

Tettigonia laudata, Walk. Insecta Saundersiana, Homopt. p. 95 [1].

Hab. MEXICO, Presidio de Mazatlan (*Forrer*), La Venta in Guerrero, Teapa in Tabasco (*H. H. Smith*), Valladolid in Yucatan (*Gaumer*); GUATEMALA, San Juan in Vera Paz (*Champion*); HONDURAS [1].

We figure a specimen from La Venta.

74. **Tettigonia sexguttata.** (Tab. XVII. fig. 14.)

Cicada sexguttata, Fabr. Syst. Rhyng. p. 75 [1].

Tettigonia sexguttata, Sign. Ann. Soc. Ent. Fr. 1853, p. 357, t. 11. fig. 7 [2]; Walk. List of Homopt. Ins., Suppl. p. 205 [3].

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, David and Bugaba in Chiriqui (*Champion*).—SOUTH AMERICA [1], S. Paulo [2 3].

This insect, of which there is rather a large series in our collection, has not been recorded before from Central America.

We figure a specimen from Bugaba.

75. **Tettigonia sociata,** sp. n. (Tab. XVII. fig. 15.)

T. sexguttatæ præcipue affinis, sed capite subtriangulari, minus antice rotundato, capite pronotoque nigris, unicoloribus, maculisque tegminum facile distinguenda.

Of a deep velvety-black colour, unicolorous, with two common white bands—one behind the scutellum stretching partly or nearly across the tegmina, and the other before the apex touching the suture and margins; there is also a spot at the margin before the apex, and a small hyaline patch before this; sometimes the two bands are absent, and the whole upper surface is black with the exception of these one or two small light patches; head subtriangular, obtusely rounded at the apex, but not completely rounded as in *T. sexguttata*; legs whitish or light testaceous.

Long. 6–7 millim.; lat. ad hum. 1–1⅓ millim.

Hab. PANAMA, Bugaba (*Champion*).

76. **Tettigonia jucunda.** (Tab. XVII. fig. 16.)

Tettigonia jucunda, Walk. List of Homopt. Ins. iii. p. 757 [1]; Sign. Ann. Soc. Ent. Fr. 1853, p. 355, t. 11. fig. 5 [2].

Hab. MEXICO (*Mus. Brit.*[2]), Rinconada (*Schaus*), Chiapas (*M. Trujillo*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Tactic, San Juan, and Cahabon in Vera Paz (*Champion*); HONDURAS (*Dyson* [1]).

This pretty species is easily known by its coloration, the two oblong-oval patches of the red ground-colour being enclosed by a dark border on each tegmen. Signoret's figure completely fails to do justice to the insect and is scarcely recognizable.

A specimen from Teapa is figured.

77. **Tettigonia sanguinolenta.** (Tab. XVII. fig. 17.)

Cicada sanguinolenta, Coqueb. Ill. Icon. Ins. p. 79, t. 18. fig. 12 [1]; Fabr. Syst. Rhyng. p. 67 [2].

Tettigonia sanguinolenta, Blanch. Hist. Nat. Ins. iii. p. 191 [3]; Sign. Ann. Soc. Ent. Fr. 1855, p. 50, t. 6. fig. 3 [4].

Tettigonia rubriguttata, Walk. List of Homopt. Ins. iii. p. 63 [5].

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann & H. H. Smith*), Teapa in Tabasco (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*); GUATEMALA, Pantaleon (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Caldera, David, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA [1 2], Surinam [3], Brazil [4]; WEST COAST OF AMERICA [5].

This is apparently a very variable species. The ordinary form has the head marked with a broad sooty-testaceous line, often abbreviated, and the pronotum with two broad

testaceous lines meeting in front, the front of the scutellum being of the same colour. The ground-colour is brilliant crimson-scarlet, the tegmina being regularly marked with black and crimson; but in extreme varieties the testaceous colour covers the whole or almost the whole of the front parts, and the red colour on the tegmina is reduced to a few small spots. It is also very variable in size, ranging from 5–8 millim. in length. The chief varieties in our collection come from Chiriqui, the series from Teapa being very constant.

The specimen figured is from Atoyac.

78. **Tettigonia guttata.** (Tab. XVII. fig. 18.)

Tettigonia guttata, Sign. Ann. Soc. Ent. Fr. 1854, p. 355, t. 12. fig. 4[1].

Hab. Mexico[1] (*Mus. Vind. Cæs.*); Honduras, Ruatan I. (*Gaumer*); Panama (*Boucard*).

This species may be known by the dark central longitudinal line on the vertex, and by the two dark more or less irregular longitudinal lines on the disc of the pronotum, which meet or nearly meet at the base of the line on the vertex, and enclose the central portion of the pronotum, which is red and immaculate.

We figure a specimen from Mexico belonging to the Vienna Museum.

79. **Tettigonia coccinea,** sp. n. (Tab. XVII. fig. 19.)

Coccinea, nigro-variegata, haud nitida; capite sat brevi, triangulari, oculis vix prominulis; fronte immaculatâ; vertice et pronoto vittâ mediâ latâ a medio illius ad hujus basim extensâ, pronoti marginibus fuscatis; scutello plerumque testaceo; tegminibus coccineis, nigro sat regulariter variegatis, apice latè fusco-hyalino; alis fuscatis; pectore pedibusque albidis.

Crimson-scarlet, variegated with black, dull; head small, triangular; vertex with a broad dark band starting from the middle and continued to the base of the pronotum, the margins of the latter fuscous, the space on either side of the dark pronotal band being more or less obscurely testaceous; frons red, without markings; scutellum testaceous; tegmina crimson-scarlet, with rather regular black markings, the markings being mostly zigzag and confluent, the apex rather broadly fusco-hyaline; there is a white patch touching the costa just before the apical portion; wings dark; abdomen red; chest and legs whitish.

Long. 9 millim.; lat. ad hum. 2 millim.

Hab. Mexico (*Sallé, in Mus. Holm.*), Atoyac in Vera Cruz (*H. H. Smith*).

Dr. Aurivillius sent me an example of this species among some unnamed insects from the Stockholm Museum.

A specimen from Atoyac is figured.

80. **Tettigonia bilimeki,** sp. n. (Tab. XVII. fig. 20.)

Præcedenti valde affinis, sed major, coccinea immaculata, vittâ centrali furcatâ ab apice frontis usque ad basim pronoti continuatâ, hujus lateribus haud fuscatis, tegminibus margine costali tantum et apice fuscatis.

Very like the preceding (*T. coccinea*), but with the tegmina crimson-scarlet, except the costal margin at the apex, and with the broad central band on the front portion of the body continued from the apex of the frons

to the base of the pronotum, with a very slight interruption at the apex of the vertex; the white spot, moreover, before the apical fuscous portion is absent.

Long. 10 millim.; lat. ad hum. 2 millim.

Hab. Mexico, San Marcos (*Bilimek, in Mus. Vind. Cæs.*).

It is possible this may prove to be a variety of the preceding, but it has a very different appearance.

81. **Tettigonia mexicana.**

Tettigonia mexicana, Sign. Ann. Soc. Ent. Fr. 1855, p. 789, t. 24. fig. 7 [1].

Hab. Mexico (*Mus. Berol.* [1]).

Among some insects sent to me from the Vienna Museum as undetermined I found two specimens labelled "*T. mexicana*, det. Signoret"; this is, evidently, however, a mistake, as they are both red insects, one being *T. magica* and the other a variety of *T. blanchardi* or an allied species: the true *T. mexicana* appears to be entirely yellow, with numerous fine dark markings. I have not seen a typical example and cannot identify it in our collection.

82. **Tettigonia tessellata.**

Tettigonia tessellata, Sign. Ann. Soc. Ent. Fr. 1855, p. 790, t. 24. fig. 9 [1].

Hab. Mexico (*Mus. Berol.* [1]); Guatemala (*Mus. Paris* [1]).

This species is not apparently represented in our collection, nor have I seen an example. According to Signoret's figure it has the upper surface evenly tessellated and marked with yellow and black: in his Latin diagnosis he says: "Rufescens, brunneo lineolata et reticulata"; and in the French description: "Jaune, linéolée et réticulée de brun-rouge."

83. **Tettigonia vulnerata.** (Tab. XVII. fig. 21.)

Tettigonia vulnerata, Sign. Ann. Soc. Ent. Fr. 1855, p. 782, t. 23. fig. 20 [1].

Hab. Mexico, Tierra Colorada in Guerrero (*H. H. Smith*); Guatemala (*Mus. Paris* [1]), San Gerónimo (*Champion*).

The specimen figured is from Tierra Colorada.

84. **Tettigonia recta,** sp. n. (Tab. XVII. fig. 22.)

Angusta, parallela, fusca flavo-variegata; capite obtuse triangulari, testaceo, maculis brunneis; pronoto convexo, fusco colore dilutiori obscure variegato; tegminibus parallelis, fuscis, maculis tribus dilute flavis; abdomine fusco; sterno pedibusque dilute testaceis.

A narrow, parallel species; head obtusely triangular, eyes scarcely prominent beyond the sides of the triangle, testaceous, variegated with light fuscous; pronotum convex, dark, obscurely variegated with lighter colour; scutellum variegated; tegmina parallel, fuscous, with three lemon-coloured patches on each—one at the

base, one behind the middle, and a small one at the margin between these, the apex subhyaline; abdomen fuscous; sternum and legs light testaceous, apex of the posterior tibiæ and the tarsi fuscous.

Long. 6 millim.; lat. ad hum. $1\frac{1}{2}$ millim.

Hab. MEXICO, San Marcos (*Bilimek, in Mus. Vind. Cæs.*), Venta de Zopilote and Amula in Guerrero (*H. H. Smith*).

This species apparently belongs to the *T. venusta* group.

We figure a specimen from Venta de Zopilote.

85. **Tettigonia æqua,** sp. n. (Tab. XVII. fig. 23.)

Fusco-brunnea, antice albido et griseo variegata, tegminibus plus minusve obscure rufo vel griseo-rufo variegatis; capite producto obtuse rotundato, oculis vix prominulis; pronoto capite paullo longiori; tegminibus sat parallelis; abdomine supra fusco; corpore subtus et pedibus testaceis, plus minusve infuscatis.

Parallel, fuscous or fuscous-brown, with the head, pronotum, and scutellum variegated with lighter and darker shades of brown, as well as with greyish and testaceous colour; head produced, obtusely rounded in front; pronotum a little longer than the head; tegmina scarcely narrowed to the apex, with several irregular red or greyish-red spots on each, more or less obscure, apex subhyaline, with a little clear hyaline spot on each tegmen near the costal margin; abdomen fuscous above; underside and legs testaceous, more or less infuscate.

Long. 6–7 millim.; lat. ad hum. $1\frac{1}{2}$ millim.

Hab. MEXICO (*Boucard, in Mus. Holm.*), Cuernavaca in Morelos (*H. H. Smith*); GUATEMALA, San Gerónimo (*Champion*).

This insect appears to be closely allied to *T. recta*, and at first I was inclined to regard it as a variety of that species; but the coloration is not the same and the head is a little differently shaped. The specimen from San Gerónimo may possibly belong to another species, but I do not feel justified in separating it.

An example from Cuernavaca is figured.

86. **Tettigonia albiceps,** sp. n. (Tab. XVII. fig. 24.)

Parva, fusca, fusco-rufo obscure notata; capite magno, producto, rotundato, albido, oculis prominulis; pronoto capite haud longiori, antice anguste albido; scutello ad medium late albido; tegminibus ad apicem obscure subhyalinis; abdomine supra læte rufo; corpore subtus et pedibus albidis vel albido-testaceis.

A small, insignificant, fuscous species, with obscure red markings; head large, produced and rounded, about as long as the pronotum, whitish-testaceous, with two minute brownish spots at the base; forehead light brown, with two testaceous spots, one above the other, in the middle surrounded by dark colour; pronotum comparatively short, light in front, with two reddish spots on the anterior margin, joining the dark colour; tegmina obscurely suffused with red, especially at the claval suture; abdomen crimson above; underside and legs very light testaceous.

Long. 5 millim.; lat. ad hum. 1 millim.

Hab. PANAMA, Bugaba (*Champion*).

This is an obscure little species, but it appears to be quite distinct, and may be easily known by its large, rounded, whitish head.

87. **Tettigonia venusta.** (Tab. XVII. fig. 25.)

Tettigonia venusta, Stål, Stett. ent. Zeit. xxv. p. 75 [1].

Hab. Mexico [1] (*Mus. Vind. Cæs.*).

In this species the head is produced and dome-shaped before the eyes (the extreme apex being broad and almost truncate), and looks somewhat swollen. There is a colourless insect in the Vienna Museum which is considerably larger than the only example of this species which I have seen, but it agrees with it in structure; this specimen is labelled "Miacatlan *, Mexico (*Bilimek*)," and ought perhaps to be referred to it.

88. **Tettigonia multicolor.** (Tab. XVII. fig. 26.)

Tettigonia multicolor, Sign. Ann. Soc. Ent. Fr. 1853, p. 363, t. 11. fig. 15 [1].

Hab. Mexico [1] (*Mus. Vind. Cæs.; Mus. Holm.; Sallé*), Cuernavaca in Morelos (*H. H. Smith*), Orizaba (*Bilimek, F. D. Godman, & H. H. Smith*).

A specimen from Cuernavaca is figured.

89. **Tettigonia cosmopolita.**

Tettigonia cosmopolita, Sign. Ann. Soc. Ent. Fr. 1853, p. 364, t. 11. fig. 16 [1]; Walk. List of Homopt. Ins., Suppl. p. 193 [2].

Hab. Mexico [1 2].—Brazil [1 2].—S. Africa, Cape of Good Hope [1], Natal [2].

I believe that there is some mistake with regard to this species, and give the localities for what they are worth; it is not represented in our collection. Stål omits it altogether from the "Hemiptera Mexicana" (Stett. ent. Zeit. xxv. pp. 49–86); it appears to be a very distinct and pretty species.

90. **Tettigonia atropunctata.** (Tab. XVII. fig. 27.)

Tettigonia atropunctata, Sign. Ann. Soc. Ent. Fr. 1854, p. 354, t. 12. fig. 3 [1].

Hab. Mexico (*Sallé*), Orizaba (*H. H. Smith; F. D. Godman; Bilimek, in Mus. Vind. Cæs.*), Aculzingo in Vera Cruz (*Bilimek, in Mus. Vind. Cæs.*).—Brazil [1].

No one would recognize this species from Signoret's figure; he represents it with a snow-white head and pronotum and drab tegmina, whereas it is a bluish-green insect, with the head and usually the front part of the pronotum lighter. I was only able to identify it by comparison with specimens kindly sent to me from the Vienna Museum; Signoret's description is much more accurate than his figure.

The specimen figured is from Orizaba.

* Near Cuernavaca, in the State of Morelos.

91. **Tettigonia lutea.** (Tab. XVIII. fig. 1.)

Tettigonia lutea, Sign. Ann. Soc. Ent. Fr. 1855, p. 773 [1].

Hab. MEXICO, Atoyac in Vera Cruz (*H. H. Smith*), Jalapa (*Bilimek, in Mus. Vind. Cæs.*); GUATEMALA (*Mus. Paris* [1]), Cerro Zunil (*Champion*).

The hinder spot on the central line of the pronotum is sometimes wanting, and the tegmina, which are described by Signoret as "immaculées," occasionally have a small patch at the shoulder on a line within the outer margin fuscous.

The specimen figured is from Atoyac.

92. **Tettigonia hilaris.**

Tettigonia hilaris, Stål, Stett. ent. Zeit. xxv. p. 75 (1864) [1].

Hab. MEXICO (*coll. Signoret* [1]; *Mus. Holm.*).

This appears to be merely a variety of the preceding (*T. lutea*) with two spots (instead of one) on the front of the vertex, and two (instead of one) towards the anterior margin of the pronotum; as, however, I have only seen one specimen I prefer not to unite them at present. The species is not represented in our collection.

93. **Tettigonia nigroguttata.**

Tettigonia nigro-guttata, Sign. Ann. Soc. Ent. Fr. 1855, p. 772, t. 23. fig. 8 [1].

Hab. MEXICO (*Mus. Berol.* [1]), San Marcos (*Bilimek, in Mus. Vind. Cæs.*).

This species is allied to the two preceding, but is larger and has a longer head. It is not represented in our collection.

94. **Tettigonia reservata,** sp. n. (Tab. XVIII. fig. 2.)

Subparallela, testaceo-viridescens; capite magno, producto, rotundato, dilute flavo, ocellis et maculâ ad medium verticis nigris; fronte, maculâ nigrâ ante verticem exceptâ, immaculatâ; pronoto virescente, antice testaceo, disco punctis duobus nigris transversim dispositis instructo; scutello magno, flavo-testaceo, concolori; tegminibus fere concoloribus; alis fumosis; abdomine supra nigro; corpore subtus pedibusque dilute flavo-testaceis.

Subparallel, greenish-testaceous; head large, produced, rounded, light yellow, with the ocelli and a spot on the middle of the vertex black; forehead unicolorous testaceous, with a black spot just before the vertex; eyes large and rather prominent; pronotum greenish, with the front broadly, and the rest of the margins narrowly, testaceous, the disc with two small black spots about the middle, arranged transversely; scutellum large, testaceous; tegmina dull, with a mealy appearance, the apex hyaline; wings dark; abdomen black above; underside and legs light yellow-testaceous, the claws fuscous.

Long. 6–6½ millim.; lat. 1½ millim.

Hab. MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

This species is allied to *T. lutea*, Sign., but differs in being shorter and dissimilarly coloured; it also has a black spot on the centre of the vertex, and two others (instead of one) on the disc of the pronotum.

The specimen figured is from Atoyac.

95. **Tettigonia 14-punctata.**

Tettigonia 14-*punctata*, Sign. Ann. Soc. Ent. Fr. 1855, p. 782, t. 23. fig. 19[1].

Hab. Mexico (*Mus. Berol.*[1]).

A single specimen sent me as this species from the Vienna Museum has the head shorter, and broader in front, and the spots much larger, than shown in Signoret's figures. It appears to be merely a more spotted variety of *T. nigroguttata*.

96. **Tettigonia lucasi.** (Tab. XVIII. fig. 3.)

Tettigonia lucasii, Sign. Ann. Soc. Ent. Fr. 1855, p. 778, t. 23. fig. 16[1]; Stål, Stett. ent. Zeit. xxv. pp. 76, 471[2].

Hab. Mexico[2] (*Mus. Holm. & Mus. Vind. Cæs.*); Guatemala (*Mus. Paris*[1]), San Gerónimo and Capetillo (*Champion*).

A specimen from San Gerónimo is figured.

97. **Tettigonia edwardsi.**

Tettigonia edwardsii, Sign. Ann. Soc. Ent. Fr. 1855, p. 780[1].

Hab. Guatemala (*Mus. Paris*[1]).

I have not seen a specimen of this species, and it is not figured by Signoret.

98. **Tettigonia dohrni.**

Tettigonia dohrnii, Sign. Ann. Soc. Ent. Fr. 1855, p. 793, t. 24. fig. 13[1].

Hab. Mexico (*Mus. Berol.*[1]).

I have not seen the type of this species, nor have I been able to identify it in our collection.

99. **Tettigonia completa**, sp. n. (Tab. XVIII. fig. 4.)

Flava, lineâ latâ centrali rufescente a fronte usque ad apicem tegminum extensâ, duabusque ad latera antice nigris instructa; capite magno, producto, oculis vix prominulis; pronoto convexo, nitido, haud capite longiori, basi leviter sinuatâ; tegminibus ad apicem angustatis; corpore subtus pedibusque flavis.

Yellow, with a broad central refescent line extending from the top of the forehead along the vertex (where it is dark in front), pronotum, scutellum, and suture to the apex of the tegmina; on each side also there is a corresponding line reaching from the metopidium along the margins of the pronotum (which are dark) and the sides of the tegmina; head as long as the pronotum, and a little narrower than its base, produced and rounded; pronotum convex and shining, very gently sinuate at the base; underside and legs yellow. Long. 7 millim.; lat. vix 2 millim.

Hab. Mexico, Chilpancingo and Amula in Guerrero (*H. H. Smith*).

At first sight, this species resembles *T. lucasi*, but it differs entirely in the shape of the head, and the coloration is also distinct.

100. **Tettigonia delicata,** sp. n. (Tab. XVIII. fig. 5.)

Testacea, capite pronotoque nigro vel rufo-fusco notata, illo producto antice obtuso, oculis vix prominentibus; scutello flavo, rufo-brunneo notato; tegminibus testaceo, griseo, et rufo-brunneo, sat regulariter lineatis, sed colore variante; corpore subtus pedibusque rufo-flavis.

Testaceous, with the head and pronotum spotted and lined with black or fuscous, the latter with four or six small dark spots on the front and four longitudinal lines reaching from just behind there to the base, the base sinuate; head nearly as long as the pronotum, produced, obtusely rounded in front; scutellum yellow, with dark markings; tegmina narrowed to the apex, with regular lines of grey, reddish-brown, and testaceous, which are somewhat variable in tint; underside and legs orange.

Long. 7 millim.; lat. vix 2 millim.

Hab. MEXICO, Cuernavaca in Morelos (*Bilimek, in Mus. Vind. Cæs.; H. H. Smith*), Amula and Chilpancingo in Guerrero (*H. H. Smith*).

We figure a specimen from Cuernavaca.

101. **Tettigonia fuscodorsata,** sp. n. (Tab. XVIII. fig. 6.)

Dilute testacea vel flavo-testacea, vittâ latâ fuscâ, plus minusve irregulari, a fronte usque ad apicem tegminum extensâ; capite sat parvo, pronoto angustiori, ante oculos prominulos angustato et producto; antennis prælongis, fuscis; pronoto lateribus leviter rotundatis; scutello magno; tegminibus lævibus, subnitidis, hyalinis; corpore subtus et pedibus dilute testaceis.

Of a light testaceous or yellow colour, with a broad dark band extending from the front to the apex of the tegmina; this band is irregular, being narrowest in front and widest before and behind the middle: occasionally it is reduced in extent; head rather small, distinctly narrower than the pronotum, somewhat produced before the eyes and angled, broadly rounded in front; pronotum short, broadly sinuate at the base, with the sides rounded; tegmina smooth and rather shiny, hyaline; legs and underside light testaceous.

Long. 6–7 millim.; lat. vix 2 millim.

Hab. MEXICO, Juarez (*Cockerell*), Amula in Guerrero, Mexico city, Vera Cruz, Teapa (*H. H. Smith*); GUATEMALA, Cerro Zunil 4000 to 5000 feet, Pantaleon (*Champion*).

The species is variable, and the dark band is often partly or almost entirely wanting; the head also appears to vary in size. The specimen from Juarez may belong to another species.

An example from Cerro Zunil is figured.

102. **Tettigonia verecunda,** sp. n. (Tab. XVIII. fig. 7.)

Fusiformis, albida, rufo-brunneo et miniato lineata; capite producto, ante oculos leviter angulato, deinde obtuse rotundato, lineis duabus sat latis longitudinalibus rufo-brunneis; pronoto brevi, antice angustato, ad medium lineis latis duabus dilute brunneis in scutello continuatis, ad latera lineis latis duabus miniatis; scutello maculis duabus nigris conspicuis; tegminibus semivitreis, suturâ clavali anguste miniatâ; corpore subtus et pedibus flavis vel flavo-testaceis.

A delicate, fusiform, whitish species; head produced, slightly angled a little before the eyes and then obtusely rounded in front, with two longitudinal, narrow, reddish-brown lines, which are continued, but much more broadly, on the pronotum and scutellum; pronotum very short, narrowed in front, with two broad scarlet lines at the sides; scutellum with a very conspicuous round black spot on each side; tegmina semivitreous, with the claval suture narrowly scarlet, and a few very obscure markings, but not lined, the apex slightly fuscous; underside and legs yellow.

Long. 6 millim.; lat. $1\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Var. *cuernavacæ*, n.

Quoad staturam structuramque cum formâ typicâ congruens, sed lineis miniatis deficientibus, et tegminibus distincte anguste fusco-lineatis distinguenda.

Agreeing exactly with the type-form in size and structure, but without the scarlet lines, and with the tegmina furnished with distinct, narrow, fuscous lines.

Hab. Mexico, Cuernavaca in Morelos (*H. H. Smith*).

103. **Tettigonia induta**, sp. n. (Tab. XVIII. fig. 8.)

Aurea, vel testacea vel viridi-testacea, nigro lineata et notata; capite triangulari, antice angulato, oculis prominulis; pronoto capite longiori, antice angustato, lineâ brevi in disco, interdum deficiente, maculisque quatuor ad basim, nigris sed variantibus; scutello modico; tegminibus fusco variegatis, lineâ latâ nigrâ pone humeros; alis fumatis; abdomine fusco, sterno et pedibus testaceis.

Of a golden, testaceous, or greenish-testaceous colour, variegated with black and brown; head triangular, pointed, eyes prominent, front of vertex with three large black spots, forehead with two black lines; pronotum narrowed in front, longer than the head, with a short black line on the disc, sometimes wanting, and two longer or shorter lines in the centre of the base, flanked by two spots at the angles; the markings, however, are variable, and some are occasionally wanting; scutellum unicolorous, except for two spots at the base meeting the basal lines on the pronotum; tegmina considerably narrowed to the apex, variegated with brown, and with a broad black line at the shoulders, meeting another on the sternum; abdomen fuscous above and below; sternum and legs testaceous, claws fuscous.

Long. 7 millim.; lat. vix 2 millim.

Hab. Mexico, Orizaba (*F. D. Godman & H. H. Smith*); Guatemala, Cerro Zunil, Volcan de Atitlan, Guatemala city (*Champion*); Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

The markings are variable in this insect: in one of the specimens from the Volcan de Irazu the two central lines extend from the base for two-thirds of the length of the pronotum, while in the type-form they are reduced to two patches. The tegmina sometimes have the darker markings uniformly brown or dark fuscous, and the ground-colour is very variable.

A specimen from Orizaba is figured.

104. **Tettigonia clepsydra**, sp. n. (Tab. XVIII. fig. 9).

Testacea, fusco-variegata; capite late triangulari, rufo-brunneo variegato, oculis prominulis; pronoto rufo-brunneo variegato, lineâ albidâ subobliquâ utrinque distinctâ; scutello ad basim maculis duabus nigris instructo; tegminibus fuscis, albido late variegatis; pedibus testaceis.

Head and pronotum testaceous, variegated with reddish-brown; head broadly triangular, eyes rather prominent; pronotum with a distinct whitish suboblique line on each side; scutellum with two black spots at the base; tegmina dark brown, with a large whitish patch extending over a great part of their surface, constricted and very narrowly divided in the middle, and enclosing a common fuscous oval patch at the suture; before the apex there is an irregular transverse whitish band; legs testaceous.

Long. 6 millim.; lat. 2 millim.

Hab. Guatemala, Cerro Zunil (*Champion*).

This species is more robust and has a broader head than the preceding. At first sight, as will be seen from the figures, it is extremely distinct, but *T. induta* is so

variable that *T. clepsydra* may prove to be only a variety of that species. The specimen of *T. induta* from the Volcan de Atitlan seems to form a connecting-link ; it is possible, however, that the insects I have described as *T. induta* ought to be further divided.

105. **Tettigonia flavivitta,** sp. n. (Tab. XVIII. fig. 10.)

Brevior, brunnea, testaceo flavoque variegata ; capite sat brevi, triangulari, oculis prominulis ; pronoto postice quam antice distincte latiori ; tegminibus versus apicem angustatis, vittâ flavâ latâ plus minusve irregulari a humeris usque ad pone medium extensâ ; corpore subtus fuscescenti ; pedibus testaceis ad partem fuscatis.

Comparatively short and broad, widest about the middle, brown, variegated with lighter and darker colour, and with a broad irregular yellow band on the tegmina extending from the shoulder to behind the middle ; head short, triangular, eyes more or less prominent ; pronotum convex, narrowed in front ; scutellum variegated with testaceous ; underside more or less fuscous ; legs variable in colour, usually testaceous, with the base of the femora, some rings on the tibiæ, and the joints of the tarsi more or less fuscous.

Long. 6 millim.; lat. 2 millim.

Hab. Mexico, Chilpancingo, Omilteme, Xucumanatlan, and Amula in Guerrero 4600 to 8000 feet (*H. H. Smith*).

A specimen from Chilpancingo is figured.

106. **Tettigonia compta,** sp. n. (Tab. XVIII. fig. 11.) = occatoria

Parva, rufa, testaceo plus minusve distincte lineata ; capite producto, antice obtuse rotundato ; fronte ante verticem maculâ magnâ nigrâ instructâ ; pronoto convexo, lateribus leviter rotundatis ; scutello magno ; tegminibus margine costali usque ad pone medium purpureâ ; alis fumosis ; corpore subtus testaceo vel ad partem fuscato ; pedibus testaceis.

A small species, striped alternately with red and testaceous lines, the outer ones almost meeting just before the vertex close to a round black spot on the top of the forehead, and an inner pair meeting and forming a rounded angle within those on the vertex ; a central line is continued down the pronotum and scutellum ; head produced, obtusely rounded ; pronotum with the sides slightly rounded ; tegmina with the costal margin purple to beyond the middle, and with the apex broadly hyaline and more or less distinctly marked with transverse fuscous lines ; abdomen fuscous above, testaceous, or in part fuscous, beneath ; legs testaceous.

Long. 5–6 millim.; lat. 1–1½ millim.

Hab. Mexico, Cuernavaca in Morelos, Chilpancingo, Tepetlapa, Dos Arroyos, and Tierra Colorada in Guerrero (*H. H. Smith*).

A specimen from Cuernavaca is figured.

107. **Tettigonia tunicata,** sp. n. (Tab. XVIII. fig. 12.)

Rufa, purpureo lineata ; capite, pronoto et scutello plus minusve testaceo-variegatis ; capite triangulari, producto, oculis vix prominulis ; pronoto nitido, convexo ; tegminibus ad apicem hyalinis ; alis fumatis ; abdomine supra fusco vel rufo-fusco ; corpore subtus et pedibus dilute testaceis.

A small species, with the head triangular, testaceous, variegated with reddish-brown ; forehead light yellow, with a black spot just at the vertex ; pronotum convex and shining, with the sides and front testaceous, and a black mark just behind the eyes, and the disc with longitudinal lines of red and purple ; scutellum testaceous, variegated with reddish-brown ; tegmina red, with purple lines, the apex hyaline, with fuscous

markings; abdomen above fuscous or fuscous-red, with lighter lines and a purple reflection; underside and legs light testaceous-yellow, apex of posterior tibiæ and claws usually fuscous.

Long. 6–7 millim.; lat. $1\frac{1}{2}$ millim.

Hab. Mexico, Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Chilpancingo and Xucumanatlan in Guerrero (*H. H. Smith*).

This species is allied to *T. compta*, but is on the average larger, with the head more pointed and the colour different. The purple lines on the disc of the tegmina are sometimes indistinct, but the costal margin (as in *T. compta*) appears to be always purple from the shoulders to behind the middle.

An example from Chilpancingo is figured.

108. **Tettigonia sororia,** sp. n. (Tab. XVIII. fig. 13.)

T. tunicatæ affinis, sed minor; capite triangulari, producto, oculis vix prominulis, testaceo dilute rufo-brunneo lineato, lineis in pronoto scutelloque continuatis; pronoto obscure viridi, antice testaceo; scutello magno, testaceo; tegminibus viridi, griseo, flavo-virescenti et rufo-brunneo variegatis, angustis, elongatis, sat acutis; abdomine flavo-brunneo; corpore subtus pedibusque dilute testaceis, apice tibiarum et unguibus fuscis.

Of much the same shape as *T. tunicata*, but smaller; head triangular, testaceous, with a black spot on the forehead before the vertex, and reddish-brown lines on the vertex, which are continued on the pronotum and scutellum; pronotum green, testaceous in front and at the sides; scutellum testaceous; tegmina with the costal margin until beyond the middle bright greenish-yellow, disc variegated with reddish-brown, greyish-green, and bluish-green, interior apical portion broadly hyaline; abdomen yellowish-brown; underside and legs light testaceous, apex of tibiæ and claws fuscous.

Long. 5–6 millim.; lat. $1\frac{1}{3}$ millim.

Hab. Mexico, Cuernavaca in Morelos, Tepetlapa in Guerrero (*H. H. Smith*).

We figure a specimen from Cuernavaca.

109. **Tettigonia civilis,** sp. n. (Tab. XVIII. fig. 14.)

Viridescens, brunneo testaceoque variegata, sat nitida; capite perobtuse rotundato, oculis vix prominulis, testaceo plus minusve brunneo variegato; pronoto antice angustiori viridescens, antice testaceo; scutello brunneo et testaceo, maculis duabus ad basim nigris; tegminibus obscure irroratis ad latera late nigro-brunneis, glabris, apice late hyalino; alis fumatis; abdomine fusco; corpore subtus et pedibus testaceis plus minusve infuscatis.

Of an obscure greenish colour, with the head and front part of the pronotum testaceous, variegated with fuscous or light reddish-brown; head moderately produced, very obtusely rounded, with the eyes scarcely prominent; forehead covered on each side with transverse lines enclosing a dark space, within which is a light spot, and near the vertex a large round black spot; these lines are usually continued on the apex of the vertex; pronotum greenish behind, the front and sides yellow-testaceous, more or less variegated all over with brown or reddish-brown; scutellum large, brown on the disc, testaceous at the sides, with two large spots at the base; tegmina with a broad rich velvety-black-brown border at the sides, covering nearly the whole of the clavus, which is obscure or absent in not quite mature specimens, the remainder dark green, more or less obscurely variegated with brown; the colour, however, is variable, and the brown colour sometimes prevails; abdomen fuscous; underside and legs testaceous, more or less infuscate.

Long. 7 millim.; lat. vix 2 millim.

Hab. Mexico, Omilteme, Xucumanatlan, Chilpancingo, and Amula in Guerrero (*H. H. Smith*).

A specimen from Omilteme is figured.

110. **Tettigonia cyanescens.**

Tettigonia cyanescens, Walk. List of Homopt. Ins. iii. p. 760[1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 355, t. 12. fig. 5[2].

Hab. MEXICO[2].—VENEZUELA[1].

We have no representative of this species in our collection; as Signoret observes, there is nothing about this insect which justifies the name of *cyanescens*, as it is of a dirty testaceous or yellowish colour, with black markings.

111. **Tettigonia lunata.**

Tettigonia lunata, Sign. Ann. Soc. Ent. Fr. 1854, p. 349, t. 11. fig. 13[1].

Hab. MEXICO (*coll. Spinola & coll. Signoret*[1]).

This species does not appear to be represented in our collection.

112. **Tettigonia mollipes.** (Tab. XVIII. fig. 15.)

Tettigonia mollipes, Say, Journ. Acad. Phil. vi. p. 312 (1831)[1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 726, t. 21. figg. 12, 13[2].
Tettigonia innotata, Walk. List of Homopt. Ins. iii. p. 770[3].
Tettigonia angulifera, Walk. loc. cit. p. 771[4].
Tettigonia antica, Walk. loc. cit. p. 771[5].
Tettigonia minor, Walk. loc. cit. p. 772[6].
Tettigonia producta, Walk. loc. cit. p. 772[7].
Tettigonia acuta, Walk. loc. cit. p. 773[8].

Hab. NORTH AMERICA[8], Newfoundland[4], United States[1 2 6], New York[5], Florida[7 8].—MEXICO[2], Ventanas (*Forrer*), Omilteme, Amula, and Xucumanatlan in Guerrero, Cuernavaca, Mexico city, Vera Cruz, Atoyac, Teapa, and Frontera (*H. H. Smith*), Orizaba (*H. H. Smith & F. D. Godman*); GUATEMALA, Cahabon in Vera Paz, Guatemala city (*Champion*); NICARAGUA, Chontales (*Janson*).—BRAZIL[3]; ANTILLES, Cuba[2].

This widespread and common American species appears to be very variable in size and in the shape of the head, which is much more produced in some specimens than in others. It is possible that some of the small examples with less produced head may belong to different species, but intermediate forms occur, and they are not, I think, really distinct. The reticulation of the apex of the tegmina will distinguish *T. mollipes* from most of the allied species.

A specimen from Xucumanatlan is figured.

113. **Tettigonia notaticeps,** sp. n. (Tab. XVIII. fig. 16.)

Viridis, nitida; capite longo, producto, obtuse triangulari, flavo-testaceo, nigro distincte et regulariter notato, oculis prominulis; pronoto viridi, capite breviori, antice flavo-testaceo, nigro notato; scutello flavo-testaceo, nigro figurato; tegminibus virescentibus, venis nigris, apice hyalino; corpore subtus testaceo, ad partem nigrescenti; pedibus testaceis.

A somewhat robust, dark green, shining species, with the head, front of pronotum, and scutellum yellow-testaceous, distinctly and regularly figured with black: head long, produced, obtusely triangular, with the eyes rather prominent; pronotum narrowed anteriorly, finely transversely rugose, impressed in front on both sides, shorter than the head; tegmina green, with black veins, hyaline at the apex; underside yellow-testaceous, in part black; legs testaceous, with the claws and more or less of the tarsi infuscate.
Long. 7 millim.; lat. vix 2 millim.

Hab. GUATEMALA, Totonicapam 8500 to 10,500 feet (*Champion*).

This is a very distinct species; it is in some points allied to *T. mollipes*, but differs by its less pointed head, dissimilar coloration, and the absence of reticulation at the apex of the tegmina.

114. **Tettigonia diducta,** sp. n. (Tab. XVIII. fig. 17.)

Parva, viridescens; capite late triangulari, antice obtuse angulato, dilute brunneo testaceo variegato; pronoto antice angustato flavo-virescente ad basim plerumque obscuriori; scutello viridi-testaceo; tegminibus venis distinctis dilutioribus, apicem versus reticulatis, apice hyalino; abdomine supra fusco; corpore subtus et pedibus flavo-testaceis.

A small, inconspicuous, green or greenish species, with a broadly triangular head, which is plainly, though obtusely, angled in front; head and forehead reddish-brown, more or less distinctly variegated with testaceous, the latter colour sometimes prevailing; pronotum light green, usually darker on the disc and at the base, scarcely longer than the head; scutellum greenish-testaceous; tegmina with strongly marked light-coloured veins, reticulate towards the apex, which is rather broadly hyaline; abdomen fuscous above; underside and legs light testaceous-yellow.
Long. 4–5 millim.; lat. 1 millim.

Hab. MEXICO, Orizaba (*F. D. Godman & H. H. Smith*), Amula and Chilpancingo in Guerrero (*H. H. Smith*).

In the reticulation of the apex of the tegmina this species resembles small examples of *T. mollipes*, from which it may be easily known by the shape and coloration of the head, and the comparatively stronger venation of the tegmina.

We figure a specimen from Amula.

115. **Tettigonia innervis,** sp. n.

Testaceo-virescens vel dilute brunneo-testacea, antice colore dilutiori variegata; capite magno, producto, antice late rotundato, oculis vix prominulis; pronoto capite breviori, antice obscure variegato; scutello magno, acuto, testaceo, fusco-figurato; tegminibus angustis, venis vix videndis; abdomine rufo- vel flavo-testaceo; sterno et pedibus flavo-albescentibus.

A small and inconspicuous species, with the front-parts variegated more or less obscurely with light brown and testaceous; forehead without markings, except just before the vertex, where there is a round black shining spot; head large, rather longer than the pronotum, produced and broadly rounded in front, eyes scarcely prominent; pronotum comparatively short, darker on the disc and at the base; scutellum large, pointed, testaceous, figured with fuscous colour; tegmina long, narrow, and pointed, transparent amber-coloured, or light greenish, with the veins scarcely visible; abdomen rufo- or flavo-testaceous; sternum and legs whitish-testaceous.
Long. 5 millim.; lat. 1 millim.

Hab. MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

At first sight this species somewhat resembles *T. diducta*, but may easily be known by the shape of the head and the indistinct venation of the tegmina.

116. **Tettigonia prolixa,** sp. n. (Tab. XVIII. fig. 18.)

Parva, viridis; capite brevi, obtuso, oculis prominulis, hoc et parte anteriori pronoti testaceo, delicate nigro-figurato; fronte testaceâ, transversim nigro-lineatâ; pronoto convexo, nitido; scutello testaceo, maculis duabus nigris parvis ad basim instructo; tegminibus suturâ peranguste testaceâ, apice hyalino; alis fumosis; abdomine supra nigro, corpore subtus testaceo, plus minusve fusco-variegato; pedibus testaceis.

A very small and insignificant green species, with the head short, very obtusely angled, and the eyes moderately prominent; forehead and head testaceous, the former with fine transverse black lines, and the latter, together with the anterior part of the pronotum (which is testaceous or greenish-testaceous in front and at the sides), distinctly figured with black; pronotum convex and shining; scutellum testaceous, unicolorous or with faint traces of figuration, with two small black spots at the base; tegmina with the suture narrowly, but usually distinctly, testaceous, apex hyaline; abdomen black above, the underside testaceous, variegated with fuscous; legs testaceous.

Long. 4–5 millim.; lat. 1–1$\frac{1}{3}$ millim.

Hab. Mexico (*Sallé*), Orizaba (*F. D. Godman & H. H. Smith*), Tierra Colorada in Guerrero, Vera Cruz, Atoyac, Frontera, and Teapa in Tabasco (*H. H. Smith*).

This species, though very insignificant in appearance, seems to be distinct and constant, and is very easily known by the delicate figuration of the head and the front of the pronotum. There is a considerable series in our collection, all from Mexico.

I at first described this insect under another name, but I find that it is identical with three specimens in the Belgium Museum labelled "Guadeloupe, Delauney," and named "*T. prolixa*, Lethierry, n. sp." I do not known whether a description of the species has been published by M. Lethierry or not, but I have adopted his name in order to avoid confusion if such is the case.

An example from Atoyac is figured.

117. **Tettigonia virgaticeps,** sp. n. (Tab. XVIII. fig. 19.)

Viridis, nitida; capite flavo, vittâ sat latâ irregulari inter oculos nigrâ, modice producto, rotundato, oculis prominulis; fronte vix nigro notatâ; pronoto vix capite longiori, viridi, antice flavescenti; scutello flavo; tegminibus fere unicoloribus, apice hyalino, ad extremum fumosis; alis fumosis; abdomine supra nigro; corpore subtus cum pedibus dilute flavis vel testaceis.

A rather small, shining, bright green species, easily recognizable by the rather large yellow head, which has a well-marked irregular black band running across between the upper margin of the eyes, these being slightly prominent; pronotum scarcely, if at all, longer than the head, lighter in front; scutellum testaceous, with very faint traces of darker lines; tegmina lighter at the margins, especially in front, hyaline at the apex, the extreme tips smoky; wings dark; abdomen fuscous above; underside and legs light yellow, claws black.

Long. 6 millim.; lat. vix 2 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

A small series.

118. **Tettigonia quadrivittata.** (Tab. XVIII. fig. 20.)

Tettigonia quadrivittata, Say, Journ. Acad. Phil. vi. p. 312[1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 348, t. 2. fig. 11[2].

Tettigonia picta, Walk. List of Homopt. Ins. iii. p. 758[3].

Tettigonia veliformis, Walk. loc. cit. p. 764[4].

Hab. North America, Trenton Falls, New York[4].—Mexico (*Mus. Brit. & coll. Signoret*[2]), San Marcos (*Bilimek*); Guatemala, Panajachel 5000 feet (*Champion*).

An example from Panajachel is figured.

119. **Tettigonia redacta,** sp. n. (Tab. XVIII. fig. 21.)

T. quadrivittatæ affinis; capite longo, producto, rotundato, testaceo, nigro antice et ad medium lineato, oculis vix prominulis; pronoto distincte capite breviori, convexo, brunneo-testaceo, disco virescente; scutello testaceo, obscure nigro lineato; tegminibus apicem versus angustatis virescentibus, vittis duabus latis rufis; abdomine supra rufo-flavo; corpore subtus et pedibus flavis.

Head large, considerably produced, rounded, testaceous, with a black line encircling the vertex, and another just inside this including a testaceous space; there are also two fine lines on the centre of the disc proceeding from the apex of the latter to the base of the head; eyes not very prominent; pronotum convex and shining, distinctly shorter than the head, testaceous, with the centre of the disc, and the base narrowly, greenish; scutellum large, with obscure dark lines; tegmina green, with two broad crimson bands—one on the clavus, the other on the corium, the margins light; abdomen orange above; underside and legs yellow.

Long. 6 millim.; lat. vix 2 millim.

Hab. Panama, Peña Blanca (*Champion*).

This insect may possibly be a variety of *T. quadrivittata*, but it differs from the examples which I have seen of that species in having the head less triangular, more rounded, and figured as above described, and the pronotum comparatively shorter, as well as in having two crimson bands only on each tegmen. In *T. quadrivittata* the head is distinctly more triangular, of a clear testaceous colour, or suffused with red, with a broad black line along the vertex.

120. **Tettigonia idonea,** sp. n. (Tab. XVIII. fig. 22.)

Obscure rufo-castanea; capite plus minusve producto, obtuse rotundato-angulato, oculis prominulis, limbo testaceo, nigro antice marginato; fronte flavo-testaceâ; pronoto convexo, limbo anteriori et laterali albido-testaceo, margine posteriori et vittâ sat latâ longitudinali ante marginem anteriorem interruptâ virescenti; scutello fusco-rufo, unicolori; tegminibus apicem versus angustatis, margine exteriori anguste testaceo, suturâ pone scutellum et duabus vittis virescentibus, apice haud hyalino; corpore subtus testaceo; pedibus testaceis, plus minusve fusco suffusis.

A moderate-sized species, of a dark velvety reddish-chestnut-colour; head more or less produced, obtusely rounded in front, with the eyes rather prominent; round the front and sides runs a sharply-defined testaceous border, bounded before the testaceous forehead by a black line; pronotum convex and shining, with the front border and sides testaceous, and the posterior margin and a longitudinal central band, ceasing before the apical border, green; scutellum fuscous-red; tegmina gradually and considerably narrowed to the apex, with the exterior margin testaceous, and a line surrounding the scutellum and continued along the suture to about the middle, and two other lines (one extending along the claval

suture, and the other parallel to it on the disc of the corium), green, the apex not hyaline; underside light testaceous; legs testaceous, in part fuscous.

Long. 9 millim.; lat. 2 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

This is a very distinct species; at first sight it has a dark and obscure appearance, but viewed under a lens the coloration is very striking.

121. **Tettigonia cæruleovittata.**

Tettigonia lineata, Sign. Ann. Soc. Ent. Fr. 1854, p. 21, t. 2. fig. 9[1] (nec *T. lineata*, Fabr. Syst. Rhyng. p. 66).

Tettigonia cæruleovittata, Sign. Ann. Soc. Ent. Fr. 1855, p. 821 (Table des Tettigonides: correction of synonymy)[2].

Hab. NORTH AMERICA, United States[1].—MEXICO (*Mus. Vind. Cæs.*), Atoyac and Fortin in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Orizaba (*Sallé; Bilimek; H. H. Smith & F. D. Godman*), Cordova (*Sallé*), San Lorenzo (*M. Trujillo*); GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*); NICARAGUA, Chontales (*Janson*).

There is a very large series of this species in our collection. It may at once be known by the black stripes on the green ground of the tegmina, and the large and conspicuous black spot in the centre of the vertex of the head.

Var. *delineata*, n. (Tab. XVIII. fig. 23.)

Major, tegminibus rufo-brunneis vel brunneis, vittis cæruleis multo magis conspicuis, facile distinguenda.

Rather larger than the type-form, with the general ground-colour darker, and the elytra of a rich reddish-brown or brown colour, with very conspicuous light blue or greyish-blue stripes; the head is a little more pointed in front, but in this character the type-form varies considerably.

Long. 7–8 millim.; lat. 2 millim.

Hab. MEXICO, Cuernavaca in Morelos, Chilpancingo and Amula in Guerrero (*H. H. Smith*); GUATEMALA, Cerro Zunil (*Champion*).

At first sight the variety looks distinct, but on a close comparison it will be seen that it can hardly be separated, and one or two of the specimens from Teapa are entirely intermediate.

We figure a specimen of the variety from Cerro Zunil.

122. **Tettigonia composita,** sp. n. (Tab. XVIII. fig. 24.)

Sat robusta, nitida, apicem versus acuminata, nigro, castaneo, testaceo et interdum rufo plus minusve distincte variegata; capite brevi, triangulari, antice angulato, oculis prominulis; pronoto capite longiori, convexo, antice nonnihil angustato; tegminibus castaneo-rufis vel rufo-fuscis, testaceo lineatis et notatis, variantibus; abdomine supra rufo, subtus fusco; sterno pedibusque testaceis.

Rather shiny, narrowed towards the apex; head short, triangular, with the vertex plainly angled, variegated with testaceous and rufous-brown, and with dark markings in front, eyes a little prominent; pronotum convex, narrowed in front, with dark lines bordered by testaceous and rufous-brown longitudinal bands; scutellum similarly coloured to the pronotum; tegmina dark red or castaneous-red, with the margins and

claval suture and other stripes and patches light reddish or testaceous, the apex fuscous, with transverse curved light bands; abdomen orange-red above, fuscous below; sternum and legs testaceous, more or less infuscate.

Long. 8 millim.; lat. 2 millim.

Hab. MEXICO, Orizaba (*Bilimek, in Mus. Vind. Cæs.*); GUATEMALA, Cerro Zunil (*Champion*).

A variable species: in the specimen taken as the type the ground-colour of the tegmina is strongly marked with reddish tints, but these are absent in other examples, perhaps due to their being somewhat immature. It is almost impossible to describe the coloration accurately.

123. **Tettigonia flaccida,** sp. n.

T. compositæ affinis, sed angustior; capite longiori, oculis minus prominulis, et colore brunneo viridi-testaceo sat regulariter lineato distinguenda.

Allied to the preceding species, but narrower and more parallel, with a longer and comparatively narrower head and the eyes less prominent; head, pronotum, and scutellum light brown, lined with greenish-testaceous, the central line commencing at the base of the vertex, gradually dividing on the pronotum and scutellum, and enclosing a dark line; pronotum scarcely longer than the head; tegmina with rather regular greenish-testaceous lines; underside more or less fuscous; legs testaceous, with the knees and tarsi darker.

Long. 8 millim.; lat. $1\frac{1}{2}$ millim.

Hab. MEXICO, Orizaba (*Sallé; coll. Signoret, in Mus. Vind. Cæs.*).

I have found examples of both this and the preceding species among unnamed material belonging to the Vienna Museum.

124. **Tettigonia urbana.** (Tab. XVIII. fig. 25.)

Tettigonia urbana, Stål, Stett. ent. Zeit. xxv. p. 74 (1864)[1].

Hab. MEXICO (*Mus. Holm.*[1]), Amula and Venta de Zopilote in Guerrero, Cuernavaca in Morelos (*H. H. Smith*), Vera Cruz (*Mus. Holm.*); GUATEMALA, Cerro Zunil (*Champion*).

This is rather a large species, with a strongly produced triangular head and not very prominent eyes; the head and scutellum are variegated in a constant pattern, but the light front of the pronotum is almost unicolorous; the tegmina are olive, with a deep brown tinge, the wings are brownish, and the abdomen orange.

A specimen from Cuernavaca is figured.

125. **Tettigonia obtusior,** sp. n. (Tab. XVIII. fig. 26.)

Præcedenti affinis, sed capite multo breviori et obtusiori, colore magis viridi et parte anteriori dilutâ pronoti distincte variegatâ distinguenda.

Allied to the preceding (*T. urbana*), but easily distinguished by its much shorter and more obtuse head and the greener colour, and also by having the front portion of the pronotum distinctly variegated.

Long. 9–10 millim.; lat. 2–$2\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

It is possible that this insect may be a variety of the preceding, but as it comes from an entirely different locality I am inclined to regard it as distinct.

126. **Tettigonia limbaticollis.** (Tab. XVIII. fig. 27.)

Tettigonia limbaticollis, Stål, Stett. ent. Zeit. xxv. p. 75 (1864) [1].

Hab. Mexico (*coll. Signoret* [1]), Teapa in Tabasco (*H. H. Smith*).

This species is allied to *T. urbana*, from which it may be known by the greener colour, the more distinct figuration of the front-border of the pronotum, and the narrow black line bounding the yellow margins of the latter; from *T. obtusior* it may be separated by the more elongate head, as well as by the presence of the black lateral line on the pronotum, which appears to be a constant character, and to be wanting in the allied forms.

127. **Tettigonia anceps,** sp. n. (Tab. XVIII. fig. 28.)

Præcedentibus affinis, viridis vel olivaceo-viridis; capite elongato, triangulari, testaceo nigro-lineato; fronte testaceâ, unicolori vel nigro-dimidiatâ; pronoto nitido, lævi, antice et ad latera late testaceo; scutello testaceo, unicolori; tegminibus apicem versus angustatis, suturâ anguste flavâ; abdomine supra rufo ad partem infuscato; corpore subtus pedibusque testaceis.

Allied to the three preceding species, from which it may easily be known by the unicolorous scutellum and the less close variegation of the head; it is further distinguished from *T. limbaticollis* by the absence of the black lateral line on the pronotum, and from *T. obtusior* by the much more elongate head.

Long. 7–9 millim.; lat. vix 2 millim.

Hab. Panama, Bugaba (*Champion*).

A considerable and very constant series has been received. It is possible that this and the three preceding insects may by future writers be regarded as belonging to one variable species, but at present it seems better to separate them.

128. **Tettigonia occatoria.** (Tab. XVIII. fig. 29.)

Tettigonia occatoria, Say, Journ. Acad. Phil. vi. p. 311 (1831) [1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 353, t. 12. fig. 2 [2]; Stål, Stett. ent. Zeit. xxv. pp. 75, 466 [3].

Hab. North America, United States [1 2].—Mexico [3], Ciudad in Durango 8100 feet (*Forrer*), Amula, Chilpancingo, Xucumanatlan, La Venta, Dos Arroyos, Tierra Colorada, and Tepetlapa in Guerrero, Vera Cruz, Atoyac, Teapa, and Frontera (*H. H. Smith*), Orizaba (*F. D. Godman & H. H. Smith*); Guatemala, Cerro Zunil (*Champion*); Panama, Bugaba, David, and Volcan de Chiriqui (*Champion*).

Signoret [2] describes this species as yellow, with black lines, whereas in nearly every example contained in our large series the colour of the upper surface is for the most part dark green, with the head, the front of the pronotum, and the scutellum yellow. Some of our light-coloured examples, however, nearly agree with his figure.

As there is some doubt about the identification of *T. occatoria*, a description of our insect is added:—

Green, occasionally greenish-testaceous; head testaceous-yellow, somewhat produced and rounded, with two black lines nearly or quite meeting in front, two inside these meeting in an acute angle, and a central line at the base, often only indicated; all these lines extend on to the pronotum (which is testaceous in front, and has a small black line also at the margin), and the central three are continued on the testaceous scutellum; on each of the tegmina there are six or seven black lines, which are much more apparent on the lighter specimens; apex of the tegmina hyaline, with the extreme tip and a band before this fuscous; abdomen above black; underside and legs clear testaceous-yellow, the apex of the tibiæ and claws being sometimes fuscous.

Long. 5–6 millim.; lat. $1\frac{1}{3}$ millim.

We figure a specimen from Bugaba.

129. **Tettigonia sexlineata.** (Tab. XVIII. fig. 30.)

Tettigonia sexlineata, Sign. Ann. Soc. Ent. Fr. 1855, p. 792, t. 24. fig. 12 [1].

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.*), Orizaba (*Sallé, H. H. Smith, & F. D. Godman*), Cordova (*Sallé*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); Guatemala (*Mus. Paris* [1]), Chinautla 4100 feet (*Salvin*), Cerro Zunil (*Champion*); Panama, Bugaba (*Champion*).

The single specimen from Cerro Zunil has the black lines thicker and more pronounced than in our other examples.

We figure a specimen from Teapa.

130. **Tettigonia sagata.**

Tettigonia sagata, Sign. Ann. Soc. Ent. Fr. 1854, p. 27, t. 2. fig. 15 [1].

Hab. Mexico (*coll. Germar & coll. Spinola*? [1]).—Brazil, Rio Janeiro, Santa Teresa (*Mus. Roy. Belg.*).

I cannot identify this species in our collection, although there are several which are apparently very near it, to judge from Signoret's figure.

131. **Tettigonia carissima,** sp. n. (Tab. XIX. fig. 1.)

Parva, virescenti-flava, nigro longitudinaliter vittata; capite sat lato, rotundato, oculis vix prominulis; fronte nigrâ; pronoto antice vix angustato; scutello magno; tegminibus ad apicem intus fumatis, iridescentibus; alis fuscis; abdomine fusco; pedibus albidis.

A very small species, greenish-yellow, with the metopidium black; on the upper surface two black stripes meet in the middle of the vertex, and are continued on each side nearly to the apex of the clavus, where they end in a point; between these markings there is a dark line extending along the centre of the pronotum and the scutellum; the sides of the tegmina are black, variegated with a few yellow stripes and patches, the yellow colour being continued to the apex, the inside apical portion being smoky and iridescent; wings and abdomen infuscate; legs slender, whitish.

Long. $4\frac{1}{2}$–5 millim.; lat. ad hum. 1 millim.

Hab. Panama, Bugaba (*Champion*).

This very pretty little species appears to be considerably smaller than *T. sagata*; the head, too, is more rounded, and has the two longitudinal black stripes meeting in

the centre of the vertex (instead of being continued to the apex), there is a dark central stripe on the pronotum and scutellum (which is wanting in *T. sagata*), and the coloration of the sides of the tegmina is different.

132. **Tettigonia anita,** sp. n. (Tab. XIX. fig. 2.)

Robusta, nigra, flavo vel viridescenti-flavo longitudinaliter vittata; capite rotundato; fronte nigrâ; tegminibus postice maculis quibusdam rubescentibus vel flavis vel rufo-flavis instructis; alis fuscatis; abdomine læte rufescente; pedibus dilute flavis.

Comparatively a stout species, black, with a semicircular yellow band on the vertex, and a small similarly-coloured spot, sometimes absent, at the base of the head, from which is continued a yellow band to the apex of the scutellum, and narrowly along the suture to the apex of the clavus, where it is joined by two lateral yellow or greenish or bluish bands proceeding from each end of the semicircular band on the vertex; the sides of the tegmina are black, with pink, crimson, or orange spots or patches towards the apex; wings dark; abdomen bright red, pygofer testaceous or fuscous; underside of front-parts and legs clear light yellow.

Long. 6–7 millim.; lat. ad hum. vix 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

133. **Tettigonia lativittata,** sp. n. (Tab. XIX. fig. 3.)

Parva, quoad staturam varians, flava, nigro, viridescente et cæruleo variegata, vittâ latâ centrali, duabusque lateralibus ab apice verticis ad apicem clavi continuatis, aliisque ad latera tegminum, nigris; alis fuscatis; corpore subtus pedibusque flavis.

A small species, varying considerably in size, with the ground-colour yellow or greenish-yellow, the hindmost stripe being usually bluish, and with a very clear and broad black stripe continued from the apex of the vertex to the apex of the clavus, where it is joined by two other stripes which commence in front of the head before the eyes; head triangular, produced, eyes scarcely prominent; the sides of the tegmina are striped with yellow, blue, and black, and the apical portion is fuscous, in part clear hyaline, with one or two yellow or blue spots or bands; underside and legs light yellow.

Long. 5–6½ millim.; lat. ad hum. 1–1½ millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

Our collection contains a considerable series of this insect, which appears to be allied to *T. obtecta*, Sign., from Peru. In this and the three following species the striped pattern is continued over the whole surface from the vertex to the hinder portion, and the ground-colour is more or less evenly divided, so that it may be equally reasonable to describe them as black with yellow stripes, or yellow with black stripes.

A specimen from Bugaba is figured.

134. **Tettigonia salutaris,** sp. n. (Tab. XIX. fig. 4.)

Nigra, miniato-virgata; capite sat magno, ante oculos prominulos modice producto rotundato; fronte dilute flavo-testaceâ, vertice miniato maculis duabus parvis anticis, magnâ maculâ semicirculari ante basim instructo, sed colore variante; pronoto nigro, virgis tribus latis miniatis; scutello rufo-notato; tegminibus vittâ latâ miniatâ ad suturam clavalem, aliâque lunatâ sub apice, marginibus late testaceis; corpore subtus et pedibus dilute testaceis.

Deep velvety-black, with the head in part, three longitudinal bands on the pronotum, the central one usually

abbreviated, a broad band at the claval suture, and another crescent-shaped band before the apex, bright scarlet; the head is usually scarlet, with two spots in front and a large semicircular patch before the base; head produced, rounded; pronotum very gently narrowed towards the front; scutellum marked with red; margin of the tegmina broadly testaceous; forehead, underside, and legs light testaceous-yellow.

Long. 8–9 millim.; lat. $1\frac{1}{2}$–2 millim.

Hab. Panama, Bugaba (*Champion*).

There is a variety of this insect in which the black markings of the head resolve themselves into two irregular longitudinal bands which are continued on the pronotum, and the two spots on the front of the vertex are confluent. This species is very distinct and strikingly coloured. Numerous examples were obtained.

135. **Tettigonia infulata,** sp. n. (Tab. XIX. fig. 5.)

Rufa, albido, flavo nigroque variegata; capite triangulari, ante oculos producto ad verticem obtuse angulato; fronte testaceâ nigro-lineatâ, vertice et pronoto, scutelloque flavo-rufis, nigro longitudinaliter virgatis; tegminibus variegatis; abdomine rufo, sterno testaceo; pedibus testaceis, ad partem fuscatis.

Front-parts yellowish-red; head forming an equilateral triangle, with a black spot at the vertex, which is confluent with two black bands, these being continued on to the pronotum, which has two other black bands, one on each side, the two central ones being continued on the scutellum; tegmina red, variegated with dashes of black and white, and with a yellowish band just before the fuscous inner margin, the apex fuscous, variegated with hyaline; abdomen red; underside of front-parts testaceous; legs testaceous, in part fuscous.

Long. 8 millim.; lat. vix 2 millim.

Hab. Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

136. **Tettigonia dorsisignata,** sp. n. (Tab. XIX. fig. 6.)

Elongata, subelliptica, ad medium latior, pallide testacea vel flava; capite ante oculos angulato, modice producto, oculis prominentibus; pronoto convexo, capite distincte latiori, maculâ unâ ad medium magnâ subrotundatâ; scutello ad partem fusco; tegminibus ad basim et ante apicem plus minusve nigris, suturâ rufâ vel fuscâ, maculis utrinque ad medium denticulatis suturam attingentibus, duabusque aliis pone medium sæpe cum nigro colore apicis plus minusve confluentibus instructis; pedibus flavis, unguibus fuscatis.

Broadest about the middle, of a pale testaceous colour, sometimes reddish-yellow; head with the sides inside the eyes (which are large and prominent) straight or nearly straight, produced a little before the eyes and then angled, the anterior part broadly rounded; pronotum broader than the head, convex, with a large rounded dark spot on the centre of the disc; tegmina with the suture fuscous or reddish, with a broad dark band at the base not reaching the shoulders, and more or less of the space before the apex dark; at the middle on each side, touching the suture, is a denticulate dark spot, and behind these there are two more spots reaching the suture, the latter in some specimens forming a mere thickening of the apical coloration, and in others quite distinct; legs yellow, claws fuscous.

Long. 8–10 millim.; lat. 2–3 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

137. **Tettigonia rubescens,** sp. n. (Tab. XIX. fig. 7.)

Pallide testacea, basi lateribusque pronoti vittâque latâ tegminum læte rubescente; capite brevi, vix ante oculos producto, late subtruncato, oculis prominentibus; pronoto brevissimo; scutello sat magno, unicolori vel apice rufescenti; tegminibus ad apicem valde angustatis; pedibus dilute flavis.

Pale testaceous, with the base and sides of the pronotum, a broad band on the tegmina, and sometimes the apical portion of the scutellum, red, the red band on the tegmina occasionally covering the whole of the corium except the apex; head short, but longer than the pronotum, which is very short, scarcely produced before the eyes and broadly subtruncate, eyes prominent; tegmina much narrowed towards the apex; legs light testaceous-yellow.

Long. 7–8 millim.; lat. 2–2½ millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

138. **Tettigonia aurolineata,** sp. n. (Tab. XIX. fig. 8.)

Sat robusta, nitidior, olivaceo-viridis; capite triangulari, producto, oculis vix prominulis, flavo-rufo, nigro-variegato; pronoto convexo, antice angustato, lateribus et margine apicali flavo-rufo figuratis; scutello toto flavo-rufescente; tegminibus apicem versus distincte angustatis, humeris suturaque clavali læte flavo-rufis, apice subhyalino; alis fuscis; sterno pedibusque testaceis, abdomine subtus rufescenti.

Rather robust and shining, of an olive-green colour, with the greater part of the head, the front parts of the pronotum, the whole scutellum, and the shoulders and a moderately broad line reaching along the claval suture, bright golden-orange-red; the forehead is lined transversely with black, and variegated with black and testaceous; head triangular, produced, rather sharply angled at the vertex, distinctly narrower than the base of the pronotum; pronotum convex, narrowed in front, the base broadly sinuate before the scutellum; tegmina considerably narrowed towards the apex, the latter more or less subhyaline; wings dark; chest and legs testaceous, abdomen orange-red.

Long. 8 millim.; lat. ad medium 2 millim.

Hab. Mexico, San Marcos and Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Cuernavaca in Morelos, Chilpancingo, Tepetlapa, and Xucumanatlan in Guerrero, 3000 to 7000 feet (*H. H. Smith*).

We figure a specimen from Chilpancingo.

139. **Tettigonia lemniscata,** sp. n. (Tab. XIX. fig. 9.)

Capite triangulari, obtuse rotundato, oculis prominulis, flavo, maculis tribus rufo-flavis; fronte nigro-lineatâ; pronoto convexo, olivaceo, antice et ad latera flavo maculis duabus rufo-flavis; scutello rufo-flavo; tegminibus olivaceo-virescentibus, suturâ clavali late rufo-flavâ, apice hyalino; abdomine supra rufo-flavo; corpore subtus dilute flavo; pedibus testaceis, apice tibiarum et unguibus nigris.

A moderate-sized species; the head rather short, triangular, obtusely rounded in front, yellow, with three large orange spots—two near the eyes, which are a little prominent, and one in front; forehead lined transversely with black, with a clear space in the centre and a large round black spot surrounded with a clear space before the vertex; pronotum convex, olivaceous, with the front and sides broadly yellow, and an orange spot on each side of the front part of the olivaceous colouring; scutellum orange, unicolorous, except for two small black spots at the base; tegmina olive-green or olivaceous, with the claval suture broadly orange, and the costal margin light green; abdomen bright orange above; underside of body light yellow; legs testaceous, with the apex of the tibiæ and the claws black.

Long. 8 millim.; lat. vix 2 millim.

Hab. Mexico, Omilteme, Xucumanatlan, and Soledad in Guerrero, 5500 to 8000 feet (*H. H. Smith*).

This species is rather closely allied to *T. aurolineata*, but it is smaller and more parallel, with the head shorter and the coloration different.

A specimen from Xucumanatlan is figured.

140. **Tettigonia luculenta,** sp. n. (Tab. XIX. fig. 10.)

T. aurolineatæ affinis, sed multo minor, minus robusta; capite flavo vel rufo-flavo concolori, magis acuminato, facile distinguenda; pronoto antice flavo vel rufo-flavo, postice olivaceo; scutello flavo vel rufo-flavo; tegminibus olivaceis, suturâ et marginibus anguste et suturâ clavali late flavis vel rufescentibus; alis brunneis; abdomine supra rufo-flavo; corpore subtus et pedibus dilute testaceis.

Smaller and less robust than *T. aurolineata*, with the head more pointed, yellow or orange, concolorous, or at most with one or two minute black markings; pronotum yellow or orange in front, olivaceous behind, sometimes almost unicolorous orange; scutellum unicolorous, of the same colour as the head; tegmina with the suture and margins very narrowly, and the claval suture rather broadly, yellow or orange; abdomen orange above; legs and underside light testaceous.

Long. 6–7 millim.; lat. $1\frac{1}{2}$ millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*); GUATEMALA, Cerro Zunil and Las Mercedes (*Champion*).

It is possible that this may be a small variety of *T. aurolineata*.

A specimen from Omilteme is figured.

141. **Tettigonia rufimargo.** (Tab. XIX. fig. 11.)

Tettigonia rufimargo, Walk. List of Homopt. Ins., Suppl. p. 197[1].

Hab. MEXICO, Ciudad in Durango (*Forrer*), Chilpancingo, Amula, and Xucumanatlan in Guerrero, Cuernavaca, Vera Cruz, Atoyac, Teapa, Frontera (*H. H. Smith*), Orizaba (*Sallé, H. H. Smith, & F. D. Godman*); GUATEMALA, San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

Six out of the eight specimens from Chilpancingo and the single example from Xucumanatlan are broader and more robust than the others, and also darker and more strongly marked; they form a rather distinct variety.

Walker[1] gave this insect the name *rufimargo* because in his type-specimen the abdomen was dark, with red margins; this, however, is a very variable character, and I am inclined to think that the males often have the upper surface of the abdomen dark, whereas in the females it is red. The abdomen is entirely covered by the tegmina while at rest, so that the name appears at first sight to have been assigned to the insect for no reason at all.

Var. *propior*, n. (Tab. XIX. fig. 12.)

Capite et plerumque scutello regulariter nigro-lineatis facile distinguenda.

Differs from the type-form in having the head and pronotum regularly lined with black, and the head a little more produced.

Hab. PANAMA, Bugaba (*Champion*).

As a rule, the coloration of the head in *T. rufimargo* is very constant, being testaceous-yellow, with a little green or bluish patch above the ocelli, from each of which starts a line of the same colour, these lines nearly meeting behind a small black spot on the top of the forehead.

We figure a specimen of the ordinary form from Teapa and one of the var. *propior* from Bugaba.

142. **Tettigonia pectoralis,** sp. n. (Tab. XIX. fig. 13.)

T. rufimargo affinis, sed capite longiori, minus obtuso, unicolori viridi-testaceo, oculis minoribus et minus prominulis, et fronte et sterno nigris concoloribus, distinguenda.

Allied to *T. rufimargo*, but differing from it in having the head rather longer and more pointed, and of a unicolorous testaceous colour, the eyes smaller and less prominent, and the forehead and all the front parts of the underside deep black; abdomen crimson above, light testaceous beneath; legs testaceous.

Long. 5 millim.; lat. 1 millim.

Hab. Mexico, Chilpancingo in Guerrero (*H. H. Smith*).

It is possible that this insect may be another variety of *T. rufimargo*, but it appears to be quite distinct.

143. **Tettigonia miniaticeps,** sp. n. (Tab. XIX. fig. 14.)

Capite, parte tertiâ anteriori pronoti, scutello, pedibus et corpore subtus læte miniatis vel flavo-miniatis; capite sat magno haud triangulari, rotundato, maculâ magnâ nigrâ in disco verticis, aliâque parvâ ad summam frontem instructo; pronoto convexo, lateribus fere parallelis, antice miniato, ad medium viridi-testaceo, postice chalybæo; scutello unicolori; tegminibus et alis nigro-cæruleis vel chalybæis, nitidis, ad marginem antice anguste viridi-testaceis; abdomine supra puniceo.

Head scarlet or orange-scarlet, with a large dark spot on the disc of the vertex and a smaller one in front of this, rather large, rounded (not triangular), eyes prominent, ocelli with a narrow black rim; pronotum with an orange band at the margin, a greenish one behind this, and the basal part dark steel-colour; scutellum unicolorous orange-scarlet; tegmina steel-blue, with the margins in front narrowly and a few obscure markings near the shoulders more or less greenish or testaceous, these latter, however, are often very indistinct; abdomen above crimson; legs and underside orange-scarlet or orange.

Long. 6–7 millim.; lat. vix 2 millim.

Hab. Mexico, Orizaba (*F. D. Godman & H. H. Smith*), Vera Cruz, Atoyac, Teapa, Frontera (*H. H. Smith*); Guatemala, Coatepeque, Cerro Zunil, Las Mercedes (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba, David, Volcan de Chiriqui (*Champion*).

This is a very distinct and handsome species. There is a large series of it in our collection, consisting of upwards of 150 examples, and it seems to be widely distributed, but I cannot find that it has ever been described before.

A specimen from Teapa is figured.

144. **Tettigonia spectanda,** sp. n. (Tab. XIX. fig. 15.)

Præcedenti affinis, sed major; capite sat brevi, rotundato, læte miniato; fronte testaceâ, late nigro lineatâ, basi nigrâ maculis quatuor parvis testaceis; pronoto longo, olivaceo, late miniato limbato, margine antico anguste testaceo, colore nigro limitato; scutello testaceo, nigro figurato; tegminibus ab humeris usque ad apicem miniato limbatis, margine extremo apicem versus anguste nigro; alis fusco-fumatis; abdomine rufo; corpore subtus cum pedibus testaceis, ad partem fuscis.

Allied to *T. miniaticeps*, but considerably larger; olivaceous, with a broad scarlet border continued along the whole length of the tegmina and pronotum, this being very wide on the pronotum, and with the

vertex of the head scarlet, except just at the base; head short, rounded (not triangular, without the eyes), distinctly narrower than the pronotum and much shorter than it, the eyes prominent; forehead testaceous, with three broad longitudinal black lines meeting on the front of the vertex; base of the head and apex of the pronotum narrowly variegated with black and testaceous, the red margins of the latter very broad, narrowly bordered with black internally, and nearly meeting at the apex, the portion included between them being lighter green in front and darker behind; scutellum testaceous, regularly figured with black; extreme margins of the tegmina towards the apex black; abdomen crimson above; underside and legs testaceous, in part infuscate.

Long. 7 millim.; lat. 2 millim.

Hab. Central America.

There is a single example of this insect in our collection, and unfortunately it is one of the very few specimens from which the locality-label is missing; it is, however, so very distinct and conspicuous a species that I have no hesitation in describing it, as no mistake could possibly arise regarding it.

145. **Tettigonia rufoapicata,** sp. n. (Tab. XIX. fig. 16.)

Olivacea vel viridi-olivacea; capite lato, rotundato, haud angulato, oculis prominulis, vertice limbo lato flavo-rufo post hunc testaceo-nigro figurato; pronoto sat longo, limbo laterali flavo-rufo, antice testaceo, figurato; scutello testaceo, regulariter figurato; tegminum marginibus et apice late flavis, rufis, colore apicali supra et infra nigro limitato; abdomine supra rufo; corpore subtus testaceo; pedibus dilute testaceis vel albidis.

Olivaceous, with a broad red border reaching round the front of the head and continued to within a short distance of the apex, where it is interrupted by a black band, behind which the apical portion of the tegmina is broadly orange-red, the apex itself being black; head broad, rounded and not angular, testaceous behind the red border and regularly figured with black; the front of the pronotum and the scutellum are also testaceous and regularly figured; abdomen red above; underside and legs testaceous, the latter being very pale.

Long. 7 millim.; lat. $1\frac{1}{2}$ millim.

Hab. Nicaragua, Chontales (*Janson*); Panama (*Boucard*), Bugaba (*Champion*).

We figure a specimen from Bugaba.

146. **Tettigonia orbata,** sp. n. (Tab. XIX. fig. 17.)

Olivacea vel viridi-olivacea; capite rotundato; fronte testaceâ ad medium nigrâ, vertice testaceo nigro figurato, oculis prominulis; pronoto viridi, limbo antico late testaceo, convexo, nitido; scutello testaceo, nigro-variegato; tegminibus usque ad apicem unicoloribus, apice anguste hyalino ad extremum nigro; alis fusco-fumatis; abdomine puniceo, sterno testaceo; pedibus dilute testaceis, posterioribus rufescentibus.

Olivaceous, with a brown or green tinge; forehead testaceous with a broad black central band, or almost entirely black, the vertex and scutellum testaceous, regularly figured with black; head rounded; pronotum with the front part testaceous; tegmina with the apex narrowly hyaline, the extreme tip being black; abdomen crimson; sternum and front pairs of legs light testaceous, the hinder pair more or less red.

Long. 6 millim.; lat. $1\frac{1}{2}$ millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

In shape this insect is very like *T. rufoapicata*, but it differs very much in coloration, and is evidently distinct. The two species come from widely separated localities.

147. **Tettigonia pileata,** sp. n. (Tab. XIX. fig. 18.)

Parva, sat angusta et parallela, olivacea, limbo lato verticis, lateribus pronoti, scutello, suturâ clavali late, et suturâ ipsâ ab apice hujus usque ad apicem tegminum læte flavo-miniatis; capite triangulari, obtuse rotundato, oculis vix prominulis, intra limbum testaceo, obscure figurato; pronoto sat longo, antice dilutiori; abdomine supra fusco; alis fumosis; corpore subtus dilute testaceo; pedibus albidis.

A small and rather narrow species, very brilliantly coloured, olivaceous, with a broad border round the vertex, the sides of the pronotum, the scutellum (which is comparatively small), and the claval suture, bright scarlet-orange, this colour extending along the suture from the apex of the clavus to the apex of the tegmina; head obtusely rounded, light green inside the orange border and more or less obscurely figured; pronotum lighter green in front and at the sides; tegmina subhyaline just at the apex; upperside of the abdomen fuscous, underside light green; legs very pale, with the claws fuscous.

Long. 6–7 millim.; lat. $1\frac{1}{3}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

In coloration this insect closely resembles the species of the *T. aurolineata*-group, but in the shape of the head it is more nearly allied to *T. orbata*.

Several examples were obtained.

148. **Tettigonia concinnula,** sp. n. (*T. compta*, Tab. XIX. fig. 19.)

Parva, capite triangulari, acute producto, miniato, plus minusve obscure fusco-variegato; fronte plerumque nigrâ, oculis nigris vix prominulis; pronoto convexo, antice angustato, fusco, margine anteriori late miniato; scutello miniato, concolori; tegminibus fusco-testaceis, vittâ miniatâ ad suturam clavalem, ad medium maculâ nigrâ longitudinali interruptâ, et ad apicem suturæ clavalis maculâ aliâ nigrâ parvâ instructâ; alis fumosis, truncatis; abdomine supra miniato vel puniceo; corpore subtus pedibusque testaceis, plus minusve fusco- vel rufo-variegatis.

A small, shuttle-shaped species, with the head sharply triangular, scarlet, almost unicolorous or more or less obscurely variegated with black; forehead black, with a few scarlet markings and a round spot just before the vertex; pronotum convex, narrowed in front, fuscous, with the anterior margin broadly scarlet; scutellum scarlet, unicolorous; tegmina fusco-testaceous, with a rather narrow scarlet double band running along the claval suture and continued in a single line from the apex of the clavus to the apex of the tegmina, the continuation being sometimes absent; at the middle and apex of the outer part of the band are two small black longitudinal patches, the one at the middle being very conspicuous; abdomen crimson or scarlet above; underside and legs testaceous, more or less variegated with fuscous, base of the femora dark, posterior tibiæ scarlet towards the base, fuscous towards apex.

Long. 5 millim.; lat. $1\frac{1}{2}$ millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

149. **Tettigonia teres,** sp. n. (Tab. XIX. fig. 20.)

Parva, capite triangulari, haud acute producto, oculis magnis; fronte fere totâ nigrâ; vertice, pronoto et scutello dilute rufo-testaceis, colore obscuriori figuratis; pronoto capite distincte longiori, antice angustato; tegminibus rufo-brunneis, obscure et minute albido-irroratis, maculâ ad humeros flavâ, communique maculâ hyalinâ ad medium; alis fumosis; abdomine supra rufo, subtus testaceo; sterno ad partem nigro; pedibus testaceis, femoribus ad basim late nigris.

A small species, with the front-parts light reddish-brown, figured with a darker shade; head triangular, produced, but not acute as in *T. concinnula*; pronotum distinctly longer than the head, narrowed in front; tegmina of a reddish-brown colour, with minute light spots and a common irregular hyaline spot at the middle bounded by a line of darker colour, the apex, except a very small portion internally, not hyaline; on each shoulder there is a waxy-yellow patch; wings smoky, truncate, but less so than in the preceding

and succeeding species; abdomen crimson above, testaceous beneath; sternum in part black; legs testaceous, femora broadly black towards the base.

Long. 5 millim.; lat. $1\frac{1}{2}$ millim.

Hab. MEXICO, Chilpancingo in Guerrero (*H. H. Smith*).

150. **Tettigonia robustula,** sp. n. (Tab. XIX. fig. 21.)

Parva, robusta; capite, pronoto, scutelloque testaceis; fronte nigro-lineatâ, maculâ magnâ nigrâ ante verticem, vertice producto, triangulari, oculis nigris prominulis; tegminibus sat latis, brunneo-testaceis unicoloribus; alis latis fumosis, apicibus truncatis; abdomine nigro; sterno testaceo, nigro-variegato; pedibus dilute testaceis, apice tibiarum et tarsis plus minusve infuscatis.

A small, obscure, stoutly-built species, with the front-parts testaceous, more or less suffused with obscure darker markings, especially on the pronotum; forehead lined with black and with the usual spot before the vertex well pronounced; vertex triangular, considerably produced and plainly angled in front; eyes black, rather prominent; pronotum shorter than the head, convex, narrowed in front, scarcely, if at all, sinuate at the base; tegmina comparatively broad, brownish-testaceous, narrowly hyaline at the apex; wings smoky-brown, truncate at the apex; abdomen black, more or less ringed with yellow, especially below; sternum testaceous, variegated with black; legs testaceous, with a dark spot at the base of the femora and with the apex of the tibiæ and the tarsi more or less impunctate.

Long. 5 millim.; lat. $1\frac{1}{2}$ millim.

Hab. MEXICO, Sierra de las Aguas Escondidas and Omilteme in Guerrero, 8000 to 9000 feet (*H. H. Smith*).

151. **Tettigonia satelles,** sp. n. (Tab. XIX. fig. 22.)

Parva, nigra, capite obtuse triangulari, oculis leviter prominulis; pronoto antice angustato; capite vix longiori; scutello magno; tegminibus maculis quatuor, duabus ad marginem costalem, maculâ hyalinâ divisis, et duabus ad marginem interiorem instructis; alis fumosis; abdomine supra nigro; corpore subtus et pedibus albidis.

A small, black, rather shining species; head obtusely triangular, with the eyes slightly prominent; forehead light testaceous, without any spot; pronotum almost as long as the head, very finely rugose transversely, with the base nearly straight; scutellum rather large; each tegmen with four white waxy-looking spots—two on the costal margin and two on the interior margin, the front ones of the latter being semicircular and so forming a round comma-shaped spot when the tegmina are closed; between the two costal spots is a hyaline patch; abdomen black above; underside and legs pale whitish-testaceous, clavus and sometimes part of the tarsi a little infuscate.

Long. 4 millim.; lat. 1 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

This species is allied to *T. quadriplagiata*, Walk., from the "West Coast of America," but that insect has a red abdomen and different markings. Teapa, it may be noted, is on the Atlantic slope.

152. **Tettigonia mollicula,** sp. n. (Tab. XIX. fig. 23.)

Parva, albida, fusco-lineata; capite sat magno, producto, rotundato, oculis haud prominulis; fronte dense nigro-lineatâ, maculâ nigrâ ante verticem, vertice lineâ latâ albidâ longitudinali fusco limitatâ; pronoto subparallelo, vittis duabus latis longitudinalibus rufo-brunneis ad medium, et duabus angustis fuscis ad latera instructo; scutello lineâ centrali fuscâ; tegminibus subvitreis, distincte fusco lineatis; alis vitreis; abdomine supra nigro; corpore subtus et pedibus albidis.

A very small, white species, variegated and lined with fuscous; head rather large, produced and rounded, eyes not prominent; forehead very thickly lined transversely, the lines being usually continued for a short distance on each side of the front of the vertex; vertex with a central space light, bounded by a narrow black line on each side, and with a narrow black line in the centre; pronotum scarcely longer than the head, almost parallel-sided, with two broad longitudinal rufous-brown bands in the middle and two narrow dark fuscous bands outside; scutellum with one dark line; tegmina subvitreous, yet with very distinct and sharp fuscous lines; abdomen black above; underside and legs whitish or whitish-yellow.

Long. 4–5 millim.; lat. 1 millim.

Hab. MEXICO, Venta de Zopilote, Xucumanatlan, and Amula in Guerrero (*H. H. Smith*).

A specimen from Xucumanatlan is figured.

153. **Tettigonia mollicella,** sp. n. (Tab. XIX. fig. 24.)

Præcedenti affinis, sed major, capite breviori. oculis magis prominulis, vertice maculis tribus nigris transversim dispositis; pronoto vittis duabus rufo-brunneis transversis; scutello haud lineato; tegminibus dilutius lineatis, et abdomine flavo, facile distinguenda.

Allied to *T. mollicula*, but on the average slightly larger, with a considerably shorter head and less prominent eyes; on the vertex there are three small black spots arranged transversely, and the lines on the forehead are much less marked and sometimes almost absent, and are not continued on the vertex; on the pronotum, which is shorter, are two rather broad transverse reddish-brown bands, the colour being usually faint; scutellum without the distinct central dark line; tegmina less clearly lined; abdomen yellow or whitish-yellow.

Long. 5–6 millim.; lat. 1 millim.

Hab. MEXICO, Orizaba (*F. D. Godman & H. H. Smith*), Atoyac in Vera Cruz (*Schumann*), Vera Cruz, Teapa (*H. H. Smith*).

We figure a specimen from Vera Cruz.

154. **Tettigonia tenera,** sp. n.

Præcedenti affinis, sed capite paullo magis producto, vittis latis transversalibus brunneis verticis et pronoti, lineisque rarioribus tegminum facile distinguenda.

Allied to *T. mollicella*, but with the head a little larger and more produced, without the black spot just before the vertex, and with a broad, brown, transverse band between the eyes; there is another broad brown band like this across the pronotum and two others in front of the pronotum and scutellum, as well as a narrower one towards the apex of the latter; two or three narrow brown lines extend across the upper part of the forehead; the tegmina are furnished with a few broader dark lines, especially towards the apex.

Long. 6 millim.; lat. 1 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*).

The two preceding species are each represented by four specimens in our collection, but there is only one example of *T. tenera*; it is, however, so easily recognized by the banded appearance of the front parts of the body that I have thought it best to describe it.

155. **Tettigonia fuscolineella,** sp. n. (Tab. XIX. fig. 25.)

Brevis, robusta; capite lato, perbrevi, rotundato, oculis prominulis, rufo-brunneo, fusco-variegato, lineâ ante ocellos et basi testaceis; pronoto convexo, nitido, antice rufo-brunneo, postice olivaceo, basi anguste testaceâ lineâ obscuriori ante colorem testaceum instructo; scutello rufo-brunneo; tegminibus olivaceis, fusco regulariter lineatis, marginibus anguste dilutioribus, apice subhyalino; abdomine rufo-brunneo; sterno pedibusque brunneis vel rufo-brunneis.

A short, small, robust species; head very short, broad, and rounded, the eyes prominent, reddish-brown, more or less infuscate, with the base narrowly testaceous and a narrow testaceous line before the ocelli; pronotum convex and shining, olivaceous, with the anterior margin more or less broadly reddish-brown, the base narrowly testaceous; before the testaceous space is a dark brown line, and there is usually a testaceous line behind the reddish-brown portion in front; scutellum reddish-brown; tegmina olivaceous, with very regular fuscous lines, the apex subhyaline; wings smoky; abdomen reddish-brown; sternum and legs brown or red-brown: in some specimens the colour is much brighter than in others.

Long. 5–6 millim.; lat. $1\frac{3}{4}$ millim.

Hab. Mexico, Atoyac, Vera Cruz (*H. H. Smith*), Orizaba (*Sallé, F. D. Godman, & H. H. Smith*); Panama, Bugaba (*Champion*).

An example from Atoyac is figured.

Var. *fronterœ*, n.

Cum formâ typicâ congruens, sed tegminibus fuscatis haud vel vix lineatis, suturâ clavali dilutiori facile distinguenda.

Closely allied to the type-form, but slightly smaller, with the tegmina of a uniform dark velvety-brown or blackish-fuscous colour, without distinct lines, the claval suture being somewhat lighter.

Long. 5 millim.; lat. $1\frac{1}{2}$ millim.

Hab. Mexico, Frontera in Tabasco (*H. H. Smith*).

156. **Tettigonia psittacella,** sp. n. (Tab. XIX. fig. 26.)

T. fuscolineellæ affinis, sed minor, viridis vel ochraceo-viridis; capite lato, perbrevi, oculis prominulis, nigro, basi et lineâ ante ocellos flavis; pronoto viridi, antice et postice anguste flavescente, lineâ nigrâ ante colorem flavum ad basim instructo; scutello flavescente; tegminibus virescentibus, concoloribus, apicibus subhyalinis; abdomine nigro; corpore subtus plerumque nigro; pedibus flavis vel flavo-testaceis.

Smaller than *T. fuscolineella*, to which it is closely allied; green or olivaceous-green, the head black, with a yellow line before and behind the ocelli; the pronotum narrowly yellow in front and behind, and with a black line before the yellow base; the scutellum yellow, sometimes with a black patch at the base, and the tegmina unicolorous, without lines, the apex being subhyaline with a small fuscous spot at the tip; head very short, broad, rounded, eyes prominent; pronotum slightly broader at the base than the head with the eyes; scutellum rather small; tegmina narrowed to the apex; abdomen fuscous; underside for the most part fuscous; legs yellow or yellow-testaceous.

Long. 4–5 millim.; lat. 1–$1\frac{1}{3}$ millim.

Hab. Mexico, Orizaba (*Sallé*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); Guatemala, Pantaleon (*Champion*); Panama, Bugaba (*Champion*).

This and the preceding species will probably form the types of a new genus, as they differ considerably in the shape of the head from the ordinary forms of the genus.

We figure a specimen from Teapa.

157. **Tettigonia variegata.** (Tab. XIX. figg. 27, 27 *a*.)

Tettigonia variegata, Fabr. Syst. Ent. p. 684 (1775)[1]; Sign. Ann. Soc. Ent. Fr. 1854, p. 723, t. 21. fig. 9[2].

Tettigonia pulcherrima, Blanch. Hist. Nat. Ins. iii. p. 192[3].

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Guatemala, Cahabon in Vera Paz, Pantaleon (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba, David, Volcan de Chiriqui, and Taboga Island (*Champion*).—Brazil[2].

One of the specimens from the Volcan de Chiriqui has the upper surface black, with the exception of a common oval yellowish-white patch behind the scutellum and two or three light markings on the margins of the tegmina before the apex; it cannot, however, be regarded as more than a variety.

We figure examples from Teapa and Bugaba.

158. **Tettigonia nasuta,** sp. n. (Tab. XIX. fig. 28.)

Præcedenti affinis, sed minor, nigra, nitida; capite ante oculos haud prominulos longe producto, impresso, ad medium leviter carinato; pronoto capite breviori, antice sensim angustato; tegminibus lævibus, maculâ communi ovali pone scutellum, tribusque utrinque ad latera plus minusve triangularibus, albidis; pedibus dilute testaceis.

Allied to *T. variegata*, but at once distinguished by the very long head, which is nearly as long as the pronotum and scutellum together, and is broadly impressed and finely keeled longitudinally in the centre; eyes scarcely prominent; upper surface shining black, smooth, with a common yellowish-white oval patch on the tegmina just behind the scutellum, and three large white denticulate patches at the margins of the sides; legs light testaceous.

Long. $5\frac{1}{2}$ millim.; lat. ad hum. 2 millim.

Hab. Guatemala, Vera Paz (*Champion*).

This may probably be an abnormal variety of *T. variegata*, but in its structure it is very distinct.

159. **Tettigonia typhlocyboides.**

Tettigonia typhlocyboides, Sign. Ann. Soc. Ent. Fr. 1854, p. 725, t. 21. fig. 11[1].

Hab. Mexico (*coll. Germar*[1]).

This is a very small species, 5 millim. in length, somewhat closely allied to *T. variegata*, but with a shorter and more rounded head and different markings. It is not represented in our collection, nor do I know where the type is to be found.

160. **Tettigonia angustula,** sp. n. (Tab. XIX. fig. 29.)

Parva, angusta, parallela, brunnea, fusco vel fusco-nigro plus minusve variegata; capite longo, producto, triangulari, testaceo-lineato; fronte flavo-albidâ, oculis vix prominulis; pronoto capite breviori; scutello magno, flavo-albido, angulis basalibus late fuscis; tegminibus longis, subhyalinis, maculâ parvâ elongatâ flavo-albidâ ad marginem pone medium instructis; abdomine fusco, pectore cum pedibus albidis vel flavo-albescentibus.

A small, narrow, parallel species, brown or fuscous-brown, more or less variegated with darker colour; head

long, triangular, with the eyes forming part of the triangle, usually with three or four very narrow longitudinal testaceous lines, but sometimes with a considerable part of the upper surface testaceous; ocelli set well forward on the vertex; forehead yellowish-white; pronotum shorter than the head, longitudinally marked with dark and lighter brown stripes, often indistinct; scutellum large, conspicuous, yellowish-white, with the basal angles broadly infuscate; tegmina long, darker on the margins and at the apex, with a narrow, elongate, yellowish-white patch behind the middle; wings fuscous; abdomen black or fuscous; sterna and legs yellowish-white.

Long. 5 millim.; lat. 1–1$\frac{1}{3}$ millim.

Hab. MEXICO, Omilteme, Chilpancingo, and Xucumanatlan in Guerrero, 4000 to 8000 feet (*H. H. Smith*).

Var. *immaculata*, n. (Tab. XIX. fig. 30.)

Minor, paullo angustior, nigro-fusca, immaculata; capite paullo magis producto.

Smaller and narrower than the type-form; upper surface unicolorous fuscous-black, with at most one or two very faint testaceous lines on the head; head a little more sharply produced.

Long. 4$\frac{1}{2}$ millim.; lat. 1 millim.

Hab. MEXICO, Amula in Guerrero, Cuernavaca in Morelos, Teapa in Tabasco (*H. H. Smith*).

T. angustula has not the appearance of a true *Tettigonia*, though it is closely allied to *T. variegata* and *T. nasuta*: these three, together with *T. subflava*, Sign. (from Venezuela), might perhaps with advantage be placed in a separate genus (*vide* Signoret, Ann. Soc. Ent. Fr. 1854, p. 725); but, considering the numerous transitional species in *Tettigonia*, it is better to retain them in it for the present.

The variety may prove to be distinct. We figure a specimen of the type-form from milteme and one of the var. *immaculata* from Amula.

I have already alluded (*anteà*, pp. 207, 235) to the impossibility of making any satisfactory subdivision of this very large genus: Signoret has gone further than I have done, and includes under it the species which are regarded above as belonging to the genera *Diestostemma*, *Aulacizes*, *Oncometopia*, &c.; Stål (Kongl. Svensk. Vet.-Ak. Handl. Band 8, no. 1, p. 70) attempts to tabulate twenty-seven species only of the genus *Tettigonia* proper, and in dealing with this small number has to fall back on differences in colour and other slight and comparative characters, which are quite useless for the purposes of determination.

Fam. GYPONIDÆ.

This family is rather closely allied to the Tettigoniidæ, but differs chiefly in the general facies, which is broader and more robust, and more or less oval or oblong-oval; the ocelli are situated upon the vertex, in most cases considerably behind the front margin. It includes the genera *Epiclines*, *Scaris*, *Gypona*, *Zinneca*, and *Stragania*; *Ledra*, however, with its very peculiar and distinct facies, seems best placed in a separate family. The name Gyponidæ is here adopted rather than that of Scaridæ, as *Gypona* is by far the largest and most important genus; in fact, Stål (Bidrag till Rio Janeiro-Traktens Hem.-Fauna, ii. p. 49) regards *Scaris*, Leth. & Serv., as merely a subgenus of the latter.

The males are apparently much scarcer than the females, and are unknown in the case of a large number of the hitherto described species. The characters of the last abdominal ventral segment of the female are very important, and are often of the greatest help towards the identification of species: in the male this segment, as a rule, presents very little variation of any importance.

The collection before me includes one species of *Epiclines* and a large number of *Gypona*, and Stål has described two species of *Stragania* from Mexico. Some of the forms here placed at the end of the genus *Gypona* approach very near to *Scaris*, but cannot be properly referred to it. In the insects belonging to *Scaris* proper the front part of the head appears to be rounded, if viewed from the side, and the division between the vertex and frons is quite effaced, and the ocelli are situated quite close to the eyes. The genus *Zinneca*, Amyot & Serv., seems to be confined to North America.

Some authors regard the Tettigoniidæ and Gyponidæ, as well as the Membracidæ, as subfamilies of the Jassidæ.

EPICLINES.

Epiclines, Amyot & Serville, Hist. Nat. des Ins. Hém. p. 577 (1843).
Ledra (ex parte), Fabricius, Syst. Rhyng. p. 24 (1803).

This genus may be easily recognized by the very small triangular head, which is produced into a short beak, and by the broad and projecting posterior angles of the pronotum extending far beyond the base of the tegmina; the latter are strongly narrowed behind, if viewed from above, and the head and pronotum together form a broad triangle, so that the insect is kite-shaped. The species known appear to be all of a delicate green colour.

1. **Epiclines godmani,** sp. n. (Tab. XX. figg. 1, 1 *a*, *b*, ♀.)

Virescens, nitidiusculus; capite parvo, antice rotundato, leviter rugosius punctato; pronoto amplo, hexagonali, angulis posticis late ampliatis, sat fortiter rugose punctato; scutello magno, producto, levius sculpturato,

ad basim lineâ arcuatâ impresso; tegminibus supra planis, coriaceis, fortiter rugose punctatis ad latera hyalinis; corpore subtus cum pedibus dilute testaceis; tibiis plus minusve virescentibus.

Mas segmento ultimo ventrali penultimo vix longiori, apice subtruncato.

Femina segmento ultimo ventrali in duas partes ad medium diviso, his ad apicem inter se recedentibus, basi leviter sinuatâ.

Of a delicate green colour, with the underside light testaceous; head finely sculptured; pronotum large, rather strongly and rugosely punctured, with a more or less distinctly raised line in the middle; scutellum large, produced into an elongate point behind, finely sculptured, with an impressed arcuate line at the base; tegmina flat and coriaceous above, strongly and somewhat rugosely punctured, hyaline and comparatively slightly coriaceous at the sides, with a few scattered minute black spots; tibiæ more or less green (in life the legs and underside are probably entirely of a delicate green colour).

Male with the last ventral segment of the abdomen about as long as the penultimate, subtruncate at the apex.

Female with the last segment of the abdomen slightly sinuate at the tip and divided into two portions, which slightly recede from one another at the apex and present the appearance of a shorter or longer emargination.

Long. 11–12 millim.; lat. ad angulos posteriores pronoti 6, ad. hum. $4\frac{1}{2}$–5 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Juan in Vera Paz, El Reposo (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui, Tolé (*Champion*).

We figure a specimen from the Volcan de Chiriqui.

GYPONA.

Gypona, Germar, Mag. Ent. iv. p. 73 (1821); Burm. Handb. d. Ent. ii. 1, p. 114; Amyot & Serville, Hist. Nat. des Ins. Hém. p. 579.

This genus includes a large number of species which, for the most part, bear a very strong resemblance one to another; the majority of them are very sombre-coloured insects, and possess none of the bright colours and patterns which are so conspicuous in many of the *Tettigoniæ*. The chief authorities on the genus *Gypona* are Stål and Spångberg. The latter has described and noticed just one hundred species in the 'Bidrag till Kongliga Svenska Vet.-Akad. Handlingar,' Band v. No. 3 (1878), and has endeavoured to arrange them into groups, but without much practical success. Apart, however, from the divisions, which are, of course, a help to a certain extent, Spångberg's work is most valuable. Stål roughly grouped the species on the shape of the head—whether produced or obtuse, if viewed from the side: in the typical *Gyponæ* it is depressed above and below, and if viewed from the side projects in a sort of straight beak, the frons being in almost the same horizontal plane as the vertex; in the extreme forms, however, it is quite blunt and rounded, and in shape closely resembles that of the species of the genus *Scaris*. The ocelli are very variable, both in size and position, and afford useful characters; as a rule, they are situated on or about the centre of the vertex, at a greater or less distance from one another, and only in one or two cases do they touch the front margin; in *Gypona* they never appear to be placed quite close to the eye, as in *Scaris*.

A rough table is added as a help towards distinguishing the species:—

I. Head more or less distinctly produced in front and narrowed beneath, often more or less foliaceous.

i. Interstices of tegmina not irrorated with darker or lighter spots.

1. Unicolorous light green or greenish species: size variable . . 1. *germari*; 2. *bimaculata*; 3. *unicolor*; 4. *delicata*; 5. *chiriquensis*; 6. *pallidovirens*; 7. *dubia*; 8. *excelsa*; 9. *lacteipennis*.

2. Testaceous or olive-testaceous species, with the upper surface of the abdomen bright red.

A. Ocelli about as far distant from one another as from the eyes. Size smaller, length 8–9 mm. . . . . 10. *signoreti*; 11. *obscurior*.

B. Ocelli closely approximate. Size larger, length 12 mm. . 12. *puniceiventris*.

3. Subolivaceous-yellowish species, unicolorous, with a large triangular dorsal patch on the abdomen; ocelli further from one another than from the eyes . . . . . 13. *dorsalis*.

4. Testaceous, delicate species, with the pronotum not variegated with dark markings, and with the tegmina more or less hyaline, the veins being marked with light testaceous colour; ocelli not closely approximate: length 7–9 mm. . . . . 14. *compta*; 15. *vilior*.

5. Darker species; pronotum variegated with dark markings; veins of tegmina usually strongly marked with darker colour: length 7–9 mm.

A. Discoidal transverse veins of the corium not strongly marked with dark colour; ocelli approximate . . . . . 16. *verticalis**; 17. *fuscinervis*.

B. Two central discoidal transverse veins of the corium somewhat irregularly, but strongly, marked with dark colour; ocelli not approximate . . . . . 18. *marginifrons*.

6. Rather large, broad species, 5 mm. in breadth, with the tegmina a little widened behind the middle; discoidal veins of corium not marked with darker colour . . . . . 19. *vulnerata*; 20. *postica*.

7. Large, quite parallel-sided species, with the dorsal portion of the tegmina castaneous-brown and the margins broadly whitish-testaceous: length 11–13 mm. . . . . 21. *glauca*.

ii. Interstices of tegmina irrorated with darker or lighter spots.

1. Large, robust species: length 10–13 mm.; ocelli approximate. 22. *notanda*; 23. *subtacta*; 24. *spreta*.

2. Smaller and less robust species: length $7\frac{1}{2}$–10 mm.

A. Ocelli closely approximate . . . . . 25. *miliaris*; 26. *atitlana*; 27. *alborarata*.

B. Ocelli not approximate . . . . . 28. *jansoni*; 29. *marmorata*; 30. *teapensis*; 31. *conspersa*; 32. *adspersa*; 33. *mystica*; 34. *fraudulenta*; 35. *adusta*; 36. *scutellata*.

---

* This species is very variable in colour: in some specimens the veins of the tegmina are dark and the abdomen is black above; in others the veins are scarcely marked and the abdomen is red. The black markings of the pronotum, however, will at once distinguish it.

II. Head very obtuse or rounded, if viewed from the side, never foliaceous.

i. Interstices of tegmina irrorated with darker or lighter spots.

1. Smaller species: length 8–9 mm. 37. *abjecta*; 38. *proscripta*; 39. *dohrni*; 40. *punctipennis*.

2. Larger species: length 10–15 mm. . . . . 41. *hebes*; 42. *decorata* *.

ii. Interstices of tegmina not irrorated with darker or lighter spots.

1. Ocelli situated distinctly behind the front margin of the vertex.

A. Suture of tegmina more or less broadly marked with fuscous or reddish, sometimes with smaller dark spots near the margin; ocelli not approximate . . . . . 43. *vinula*; 44. *propior*; 45. *tergata*.

B. Tegmina with a few scattered and often more or less obscure dark spots or markings, or unicolorous . . . . . 46. *hieroglyphica*; 47. *notula*; 48. *bisignata*; 49. *reservanda*; 50. *bohemani*; 51. *præterita*; 52. *extranea*.

C. Tegmina decorated with whitish-yellow markings . . . . 53. *exornata*.

D. Tegmina with the external margins variegated with white . 54. *wallengreni*; 55. *nana*.

2. Ocelli situated close behind or almost upon the front margin of the vertex . . . . . 56. *celata*; 57. *resima*.

1. **Gypona germari.** (Tab. XX. figg. 2, 2 *a*, *b*, ♀; 3, ♂.)

Gypona germari, Stål, Stett. ent. Zeit. xxv. p. 84[1].

Hab. Mexico, Ciudad in Durango 8100 feet, and Presidio (*Forrer*), Omilteme, Xucumanatlan, and Chilpancingo in Guerrero, 4600 to 8000 feet, Cuernavaca in Morelos, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Vera Cruz (*Mus. Holm.*[1]), Orizaba (*Sallé; Godman; H. H. Smith; Bilimek, in Mus. Vind. Cæs.*), San Lorenzo (*Trujillo*); Guatemala, near the city and Capetillo (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).

In the male of this species the last ventral segment is scarcely longer than the penultimate, subtruncate at the apex. In the female, which was apparently unknown to Stål and Spångberg, the last segment is emarginate in a larger or smaller arc. Stål says, "vittis pluribus verticis thoracisque necnon venis tegminum pallide flavescentibus"; but this character appears to be fugitive on the head and pronotum, owing to the fading of the colour of the insect after death; the veins of the tegmina are, however, usually distinctly marked by greenish or pale yellow lines.

There are three or four obscure, doubtful, or faded insects in our collection near *G. germari* which may very probably belong to new species, but they cannot be satisfactorily described from the examples before me. The specimen figured is from Cuernavaca.

* *Gypona decorata* can hardly be said to have the interstices of the tegmina irrorated, but there are a number of smaller and larger markings upon them, and the insect cannot well be classed with the next section.

2. **Gypona bimaculata.** (Tab. XX. figg. 4, 4 *a*, *b*, ♀.)

Gypona bimaculata, Spångb. Bihang till K. Sv. Vet.-Ak. Handl. v. 3, p. 23[1].

Hab. Mexico[1] (*Bilimek, in Mus. Vind. Cæs.*), Chilpancingo in Guerrero, 4600 feet (*H. H. Smith*).

This insect is closely allied to *G. germari*, but may be distinguished by the two minute but distinct black spots on the pronotum, and by the last ventral segment of the female being a little longer than the penultimate, feebly sinuate at the tip, and with a very slight subemarginate lobe in the centre. In the male the last ventral segment is about as long as the penultimate, and subtruncate at the apex. The specimen figured is from Chilpancingo.

3. **Gypona unicolor.**

Gypona unicolor, Stål, Stett. ent. Zeit. xxv. p. 84[1].

Hab. North America, Colorado (*Mus. Vind. Cæs.*).—Mexico[1], Teapa in Tabasco (*H. H. Smith*); Guatemala, Cerro Zunil (*Champion*).

This appears to be a very obscure species. I have seen two specimens belonging to the Vienna Museum labelled "*G. unicolor*": one, from Colorado, presented by Spångberg; the other, which apparently ought to be referred to *G. germari*, from Mexico, and presented by Signoret. I have doubtfully identified two insects in our collection as small examples of *G. unicolor*, which appears chiefly to differ from *G. germari* in the subtruncate or only slightly sinuate last segment of the abdomen in the female, and in the absence of pale bands on the head and pronotum; but these latter are often untraceable in dead and faded specimens of *G. germari*.

4. **Gypona delicata,** sp. n. (Tab. XX. figg. 5, 5 *a*, *b*, ♀.)

Parva, hyalina, dilute flavescens, immaculata; capite sat magno et producto, antice rotundato, pronoto haud angustiori, oculis leviter prominulis, ocellis approximatis; pronoto brevi, capite vix longiori, levissime transversim rugoso; scutello æquilaterali; tegminibus hyalinis, venis corii crassatis (reticulatis); alis hyalinis; corpore subtus et pedibus dilute testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali plus minusve late emarginato.

A small, transparent, pale testaceous species, with the head rather large, as broad at the base as the pronotum and of about the same length; eyes only slightly prominent; ocelli approximate; pronotum short, very finely rugose transversely; scutellum equilateral; tegmina transparent, with the veins on the corium strongly raised and reticulate; wings transparent; legs and underside pale testaceous.

Male unknown. *Female* with the last segment of the abdomen more or less broadly emarginate.

Long. 7 millim.; lat. ad hum. 3 millim.

Hab. Mexico, Chilpancingo, Xucumanatlan, and Amula in Guerrero, 4600 to 7000 feet (*H. H. Smith*).

A very distinct species, at first sight closely resembling a faded example of *G. germari*. The specimen figured is from Amula.

5. **Gypona chiriquensis,** sp. n. (Tab. XX. figg. 6, 6 *a*, *b*, ♀.)

Major, pallide virescens; capite longo sat angusto, oculis haud prominulis, ocellis approximatis, vertice antice rotundato; pronoto capite vix longiori, leviter transversim rugoso; scutello magno; tegminibus postice ampliatis, reticulatis, venis flavescentibus; alis lacteis.

Mas ignotus. *Femina* segmento ultimo ventrali arcuatim exciso.

Rather a large species, of a pale yellow or greenish-yellow colour; head small, nearly as long as broad, rounded in front; pronotum not much longer than the head, finely rugose transversely, the base very gently arcuate; scutellum large; tegmina ample, wider behind, with reticulate venation, plainly marked by yellow or greenish raised lines; wings milky-white; legs and underside testaceous.

Male unknown. *Female* with the last ventral segment of the abdomen excised in a segment of a circle.

Long. 14–15 millim.; lat. 5–7 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

6. **Gypona pallidovirens,** sp. n. (Tab. XX. figg. 7, 7 *a*, *b*, ♀.)

Quoad staturam præcedenti affinis, sed angustior; capite latiori et breviori, oculis prominulis, ocellis valde approximatis; pronoto capite fere duplo latiori; scutello levissime asperato; tegminibus haud reticulatis, venis virescentibus.

Mas ignotus. *Femina* segmento ultimo ventrali sat profunde emarginato, apice emarginationis truncato.

Of about the same length as *G. chiriquensis*, but narrower and more parallel-sided; head shorter and broader, with the eyes considerably more prominent; ocelli closely approximate; pronotum nearly twice as long as the head, with distinct transverse striation; scutellum finely asperate; tegmina not reticulate, with the veins green; underside and legs testaceous; the general colour is probably a bright light green in life, but soon fades.

Male unknown. *Female* with the last ventral segment rather deeply emarginate, the emargination being truncate at the apex.

Long. 13–13½ millim.; lat. ad hum. 5 millim.

Hab. PANAMA, Bugaba (*Champion*).

7. **Gypona dubia,** sp. n. (Tab. XX. figg. 8, 8 *a*, ♀.) Apparently ♀ of *G. verticalis* Stål

Testacea vel virescenti-testacea; capite lato, brevi, rotundato, haud producto, oculis prominulis, ocellis inter se quam ab oculis fere æque distantibus; pronoto capite plus quam duplo longiori; scutello æquilaterali; tegminibus subparallelis, venis plus minusve virescentibus et maculâ parvâ minutâ fuscatâ ad suturam communi, interdum deficiente, instructis; alis hyalinis, ad apicem fuscatis; abdomine supra flavo-virescenti vel flavo-rufo: subtus dilute testaceo; pedibus dilute testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali levissime sinuato, ad medium late subemarginato, hac parte ad medium levissime producto et minute triangulariter excisâ.

Of a dark testaceous or greenish-testaceous colour in life; the tegmina with the veins (in fresher specimens) marked with thickly-set, minute, obscure, green spots (in life the tegmina are probably in great part green, and most likely the front parts also, but the colour apparently soon fades to a uniform testaceous tint), and also with a small common dark spot before the apex; the abdomen darker above and light below. The species somewhat resembles *G. pallidovirens*, but may be easily known by the less produced, shorter, and more rounded head and less approximate ocelli, as well as by the female characters.

Male unknown. *Female* with the last ventral segment very slightly sinuate, broadly and shallowly emarginate in the middle, with the centre of the emargination slightly produced and minutely notched.

Long. 11 millim.; lat. ad hum. 4 millim.

Hab. PANAMA, Bugaba and David in Chiriqui (*Champion*).

8. **Gypona excelsa,** sp. n. (Tab. XX. figg. 9, 9 *a*, ♀.)

Quoad staturam præcedentibus affinis, nitida, hyalina, pallido-virescens; capite sat longo, subtriangulari, ocellis parvis, valde approximatis; pronoto capite vix longiori, fortiter transversim striato; scutello magno; corpore subtus pedibusque pallide viridescenti-testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali fortiter late emarginato, lobo medio lato breviter producto, apice truncato, vel ad medium vix emarginato.

A clear hyaline greenish species, with the tegmina transparent; head rather long, with the ocelli small and closely approximate; the pronotum with traces of yellowish markings, which are probably more distinct in life; legs and abdomen greenish.

Male unknown. *Female* with the last ventral segment of the abdomen broadly and deeply emarginate, and with a broad central lobe, which is not strongly produced, but almost truncate at the apex.

Long. 10 millim.; lat. ad hum. $3\frac{1}{2}$ millim.

Hab. Mexico, Amula and Xucumanatlan in Guerrero 4600 to 7000 feet (*H. H. Smith*).

Two females.

9. **Gypona lacteipennis,** sp. n. (Tab. XX. figg. 10, ♂; 11, ♀.)

Robusta, dilute testacea vel flava; capite brevi, antice rotundato, ocellis modice approximatis; pronoto capite duplo longiori, levissime transversim rugoso; tegminibus subhyalinis, spatiis intra venas testaceo perobscure maculatis; alis lacteis, opacis; abdomine flavescenti; pedibus dilute testaceis.

Mas. Minor; segmento ultimo ventrali penultimo paullo longiori, fere recto.

Femina segmento ultimo ventrali sat profunde emarginato, basi emarginationis sinuatâ, lobis lateralibus angustis.

A robust, yellow or yellowish-testaceous species, with the head short and distinctly narrower than the base of the pronotum, rounded in front; eyes a little prominent; ocelli about as far from one another as from the eyes; pronotum from two to two and a half times as long as the head, very finely rugose transversely, of a lighter yellow colour in front; tegmina with the spaces between the veins obscurely mottled with testaceous; wings milky-white, opaque; abdomen yellow or testaceous; legs testaceous.

Male with the last ventral segment a little longer than the penultimate, the apical margin almost straight.

Female with the last ventral segment rather deeply emarginate, the emargination being sinuate at the base and slightly produced in the centre; side-lobes narrow.

Long. 10–11 millim.; lat. ad hum. 4 millim.

Hab. Mexico, Jalisco (*Schumann*), Mescala, Acapulco, and Chilpancingo in Guerrero (*H. H. Smith*).

This species may be distinguished by its robust form, short and comparatively broad head, and opaque wings, and by the form of the last ventral segment of the female. The insect figured is from Chilpancingo.

10. **Gypona signoreti.** (Tab. XX. figg. 12, 12 *a*, *b*, ♀.)

Gypona signoreti, Stål, Stett. ent. Zeit. xxv. p. 83 [1].

Gypona ruficauda, Spångb. Ent. Tidskr. 1883, p. 104 [2].

? *Gypona fervens,* Walk. List of Homopt. Ins. iii. p. 838 [3] (type imperfect).

Hab. Mexico [1 2], Dos Arroyos, Amula, and Acapulco in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Jalapa (*Bilimek, in Mus. Vind. Cæs.*), San Lorenzo, Cordova (*Trujillo*); Panama, Bugaba (*Champion*).—Venezuela [3].

This insect may be known by the bright red upper surface of the abdomen, the infuscate wings, and the deep and narrow triangular emargination of the last ventral segment of the female. The apex of the tegmina is often broadly infuscate, a character chiefly seen in the male sex, but occasionally present in the female. In the male the last ventral segment is about half as long again as the penultimate, and subtruncate at the apex. I have compared our specimens with the type of *G. fervens*, Walk., and believe that the synonymy above given is correct; but the latter insect is imperfect and without the abdomen, and, under the circumstances, it seems best to use Stål's name instead of Walker's, which, of course, would otherwise have priority. The insect figured is from Atoyac.

11. **Gypona obscurior,** sp. n. (Tab. XX. fig. 13, ♀.)

Brunneo-testacea, partibus anticis dilutioribus; capite brevi, lato, oculis prominulis; pronoto in feminâ plus quam duplo, in mari duplo, capite longiori; tegminibus flavo-brunneis, marginibus dilutis flavescentibus, maculis nigris minutis duabus vel quatuor utrinque ad suturam instructis, apice infuscato; abdomine supra flavo-rufo; pedibus testaceis.

Mas segmento ultimo ventrali penultimo duplo longiori, margine posteriori leviter arcuato.

Femina segmento ultimo ventrali late emarginato ad medium fortiter lobato.

Testaceous-brown, with the front parts usually lighter, sometimes yellow; head short and broad, with prominent eyes; ocelli rather nearer to each other than to the eyes; pronotum more than twice as long as the head in the female, about twice as long as it is in the male; tegmina yellowish-brown, with the margins yellow and the apex infuscate, and with three or four small black spots on each near the suture; abdomen red, with yellowish sides; legs yellow-testaceous.

Male with the last ventral segment of the abdomen twice as long as the penultimate, its posterior margin very gently arcuate.

Female with the last ventral segment of the abdomen broadly emarginate, and with a distinct produced lobe in the centre of the emargination.

Long. 8–9 millim.; lat. ad hum. 3–3½ millim.

Hab. PANAMA, Bugaba and Caldera in Chiriqui (*Champion*).

Closely allied to *G. signoreti*, but differing in its slightly shorter and broader head, and in the female characters (which, however, are less marked in the Caldera specimen); in *G. signoreti* the last ventral segment is deeply and sharply emarginate in the middle in this sex. A specimen from Bugaba is figured.

12. **Gypona puniceiventris,** sp. n. (Tab. XX. figg. 14, 14 *a*, *b*, ♂.)

Lata, robusta, brunnea; capite sat magno, subtriangulari, antice obtuse rotundato, ocellis valde approximatis, oculis prominulis; pronoto capite distincte latiori sed haud multo longiori, lateribus rotundatis, rugoso; scutello æquilaterali acute producto, asperato; tegminibus angustis, venis crassis, sat raro reticulatis, interstitiis subtiliter rugosis; alis amplis, hyalinis, venis et basi puniceis; abdomine lato, supra læte puniceo, subtus dilute flavo-albescenti; pedibus testaceis.

Mas segmento ultimo ventrali penultimo vix longiori, apice levissime excavato-rotundato. *Femina* ignota.

A rather large, broad, and robust species, of about the same size as *G. schaumi*, of a brown or slightly castaneous-brown colour, more or less rugose; head moderately large, subtriangular, obtusely rounded in front, with the eyes prominent and the ocelli very much nearer to one another than they are to the eyes; pronotum not much longer than the head and distinctly broader, with the sides rounded, the disc strongly

rugose; scutellum produced into a sharp point behind; tegmina narrow, coarsely and evenly reticulate, with the veins thick and strongly marked; wings large, with the base and the veins bright crimson; abdomen bright crimson above, light yellow beneath; legs testaceous.

Male with the last ventral segment scarcely longer than the penultimate, gently arcuate at the margin.

Long. 12 millim.; lat. ad hum. 4–4½ millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One male specimen. This is a very distinct species, and, when the tegmina are extended, is very conspicuous by reason of the large and broad bright crimson abdomen and the crimson veins and base of the wings.

13. **Gypona dorsalis.**

Gypona dorsalis, Spångb. Bihang till K. Sv. Vet.-Akad. Handl. Band v. 3, p. 30[1].

Hab. Mexico [1].

In the female of this species the last ventral segment of the abdomen is said to be very broadly sinuate at the apex. I have not seen a specimen of it, but its proper position seems to be near *G. puniceiventris.*

14. **Gypona compta,** sp. n. (Tab. XX. figg. 15, ♂; 16, 16 *a*, ♀.)

Oblonga, sat parallela, dilute flavo-testacea, indistincte rufo-testaceo variegata; capite magno, depresso, subtus fortiter attenuato; oculis prominulis, ocellis inter se et ab oculis fere æque distantibus; pronoto capite fere tertio longiori, fortiter transversim striato, notâ parvâ distinctâ nigrâ (interdum deficiente) utrinque vix ante medium instructo; scutello magno; tegminibus hyalinis, venis late flavo-testaceis, notâ minutâ nigrâ utrinque ad humeros; abdomine supra flavescenti; corpore subtus cum pedibus dilute testaceis.

Mas segmento ultimo ventrali et valvulis genitalibus brevibus.

Femina segmento ultimo ventrali emarginatione latâ incudiformi instructo, lobis lateralibus productis ad basim sinuatis.

Of a light yellow-testaceous colour, slightly variegated with a darker shade; head broad, produced and rounded in front, much narrowed beneath; ocelli about as far from one another as from the eyes; pronotum comparatively short, with a distinct minute black spot on each side just before the middle, this being sometimes wanting; tegmina hyaline, with the veins broadly marked with testaceous, the apex sometimes slightly infuscate; underside and legs whitish-testaceous.

Male with the last ventral segment and the genital valves short.

Female. The last ventral segment with a broad and deep anvil-shaped emargination, the lateral lobes produced and sinuate rather deeply, and cut back on each side.

Long. 8–9 millim.; lat. ad hum. 2½ millim.

Hab. Mexico, Amula in Guerrero 6000 feet (*H. H. Smith*).

15. **Gypona vilior,** sp. n. (Tab. XX. figg. 17, 17 *a*, *b*, ♀.)

Testacea; capite lato, cum oculis prominulis pronoto paullo latiori, sat brevi, antice leviter rotundato, ocellis inter se quam ad oculos magis approximatis; pronoto capite fere sesqui-longiori, lateribus parallelis, levissime transversim rugoso; scutello magno; tegminibus et alis nitidis, hyalinis; abdomine supra testaceo; corpore subtus et pedibus dilute testaceis.

Femina segmento ultimo ventrali fere recto, ad medium plicato, lobis lateralibus minimis.

Testaceous, probably greenish-testaceous, with somewhat darker markings, in life; head broad and short, together with the eye broader than the pronotum, rounded in a crescent in front; ocelli nearer to one another than to eyes; pronotum about one and a half times as long as the head, with the sides parallel, very finely rugose transversely; scutellum large; tegmina and wings hyaline, the veins of the former large and transparent, those of the latter dark; abdomen above testaceous; underside and legs light testaceous.

Female with the last ventral segment short and almost truncate, finely notched or waved on its edge, with very small side-lobes.

Long. 7–8 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Amula in Guerrero 4000 feet (*H. H. Smith*).

16. **Gypona verticalis.** (Tab. XX. figg. 18, 18 *a*, *b*, ♂.)

Gypona verticalis, Stål, Stett. ent. Zeit. xxv. p. 85 [1].

Gypona mexicana, Spångb. Bihang till K. Sv. Vet.-Ak. Handl. Band v. 3, p. 18 [2].

Hab. Mexico [1 2], Chilpancingo, Amula, and Sierra de las Aguas Escondidas in Guerrero 4600 to 7000 feet (*H. H. Smith*).

Spångberg includes *Gypona verticalis*, Stål, among the species unknown to him, but I am now able to correct the synonymy, having seen two specimens of it belonging to the Vienna Museum, one labelled "*mexicana*, det Spångberg," and the other "*verticalis*, det Stål." The colour is variable, the abdomen being sometimes black and sometimes orange-red; and lighter or darker colour prevails on the front part. All the examples examined are males, and Spångberg mentions the female of his *G. mexicana* as being unknown to him. We figure a variety from Amula.

17. **Gypona fuscinervis.**

Gypona fuscinervis, Stål, Stett. ent. Zeit. xxv. p. 84 [1].

Hab. Mexico [1].

The head in this species is produced and attenuated; the body is broad and stout, and the ocelli are set very closely together. The dark venation of the wings is very conspicuous.

18. **Gypona marginifrons,** sp. n. (Tab. XX. figg. 19, 19 *a*, *b*, ♂.)

Testacea; capite brevi, sat lato, antice distincte nigro marginato; oculis prominulis; pronoto antice nigro notato; scutello unicolori vel duobus punctis ad medium nigris; tegminibus hyalinis, venis castaneis, haud irroratis, sed quibusdam fuscis maculis raro notatis; alis fumatis; abdomine supra fuscato; corpore subtus et pedibus dilute testaceis.

Rather dark testaceous; head short and moderately broad, with somewhat prominent eyes, the front of the vertex rounded and distinctly margined with black; ocelli not approximate; pronotum about three times as long as the head, with distinct black markings in front, the usual transverse striation distinct; scutellum with two dark spots or lines at about the middle, which are sometimes absent; tegmina hyaline, with the veins broadly castaneous, and with a few small darker markings, of which one or two at about the centre of the disc are most conspicuous; wings infuscate; abdomen fuscous above, with the extreme apex of the segments yellow; underside and legs light testaceous.

Long. 9 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Three male specimens.

19. **Gypona vulnerata.** (Tab. XX. figg. 20, 20 *a*, *b*, ♀.)

Gypona vulnerata, Walk. Ins. Saunders., Homopt. p. 102 (1858) [1].
Gypona viridescens, Walk. List Homopt. Ins., Suppl. p. 257 (1858) [2].
Gypona obesa, Spångb. Ent. Tidskr. 1883, p. 102 [3].

Hab. Mexico [3] (*Sallé* [2]), Orizaba (*Bilimek, in Mus. Vind. Cæs.*), Atoyac in Vera Cruz (*Schumann*); Panama, Bugaba, Caldera and Volcan de Chiriqui (*Champion*).—Brazil [1].

The above synonymy appears to be correct. Walker's localities are not always to be depended on, and it is quite possible that the type of *G. vulnerata* may have come from Mexico.

This is a very distinct insect, rather broad, slightly wider behind than in front, with the tegmina greenish (but soon fading to brown in old specimens), and rather broadly ferruginous at the base around the scutellum. In the female the last ventral segment is deeply excised in the middle, and the apex of the excision is sharply emarginate and furnished with a small fold on each side, the side-lobes of the segment being broad and considerably produced. The insect figured is from Atoyac.

20. **Gypona postica.** (Tab. XX. figg. 21, 21 *a*, *b*, ♂.)

Gypona postica, Walk. List of Homopt. Ins., Suppl. p. 258 [1].

Hab. Mexico (*Sallé* [1]); Panama, Volcan de Chiriqui, Bugaba (*Champion*).

There are three males of this species in our collection. The colour is apparently very variable: the head, pronotum, and scutellum are entirely testaceous, with the ridge separating the vertex and metopidium dark; or entirely fuscous-black, with or without obscure lighter markings, and the apex of the scutellum only testaceous. The tegmina are hyaline, with strongly marked and coarsely reticulate dark veins, which are thicker at the base, and in lighter specimens present the appearance of a darker band round the scutellum. A specimen from Bugaba is figured.

21. **Gypona glauca.** (Tab. XXI. figg. 1, 1 *a*, *b*, ♀.)

Cercopis glauca, Fabr. Syst. Rhyng. p. 91 (1803) [1].
Gypona glauca, Burm. Handb. d. Ent. ii. 1, p. 114 [2]; Stål, Kongl. Sv. Vet.-Ak. Handl. viii. 1, p. 84 [3]; Walk. List of Homopt. Ins. iii. p. 834 [4]; Spångb. Bihang till Kongl. Sv. Vet.-Ak. Handl. v. 3, p. 15 [5].

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*). — South America [1 3], Cayenne [5], Pará [2], Bahia [2].

This species may be easily recognized by reason of its shape and colour and the form of the last ventral segment of the female. A specimen from Bugaba is figured.

22. **Gypona notanda,** sp. n. (Tab. XXI. figg. 2, 2 *a*, *b*, ♀.)

Fusco-castanea, colore obscuriori et dilutiori plus minusve variegata; capite parvo, antice rotundato; ocellis approximatis, oculis prominulis; pronoto capite multo latiori, lateribus late testaceis, colore testaceo nigris vittis (interdum deficientibus) limitato, et interdum vittâ nigrâ centrali longitudinali instructo; scutello castaneo, postice acute producto, punctis duobus testaceis apicem versus notato; tegminibus maculis quibusdam testaceis fuscisque plus minusve obscure variegatis; alis fumosis; corpore subtus pedibusque fuscis.

Mas minor, tegminibus distinctius variegatis, segmento ultimo ventrali fortiter ad medium carinato.

Femina major, segmento ultimo ventrali tenuiter sinuato, ad medium leviter producto et minute emarginato.

Dark castaneous-brown, usually more or less obscurely variegated with fuscous, the pronotum often with darker bands and the sides broadly testaceous; occasionally a dark longitudinal band is present on the centre of the disc of the pronotum and may be continued on to the head; head small, with the ocelli much closer to one another than to the eyes; pronotum much broader than the head; scutellum with two small testaceous spots before the apex; tegmina with scattered testaceous markings, a common spot before the apex being usually more conspicuous than the rest; wings dark; legs and underside fuscous.

Male smaller, with the tegmina more distinctly variegated, and with the last ventral segment strongly carinate in the middle.

Female larger, with the last ventral segment not very deeply sinuate, broadly and feebly produced in the middle, and slightly emarginate in the centre of the produced portion.

Long., ♂, 10, lat. ad hum. 4 millim.; long., ♀, 14, lat. ad hum. 5 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Guatemala, San Gerónimo, Lanquin, and Teleman in Vera Paz (*Champion*); Panama, Bugaba (*Champion*).

It is possible that the males belong to a different species, but I cannot satisfactorily separate them. We figure a specimen from Bugaba.

23. **Gypona subtacta.** (Tab. XXI. figg. 3, 3 *a*, *b*, ♀.)

Gypona subtacta, Walk. List of Homopt. Ins., Suppl. p. 256[1].

Gypona schaumi, Stål, Stett. ent. Zeit. xxv. p. 83[2].

Gypona funebris, Spångb. Ent. Tidskr. 1881, p. 37[3].

Hab. Mexico[2 3] (*Sallé*[1]), Jalapa (*Höge*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

The female of this species was unknown to Spångberg; it has the last ventral segment broadly bisinuate and produced into a short and obtuse lobe between the sinuations, the lobe itself being distinctly emarginate. In the male the last ventral segment is almost half as long again as the penultimate, with the apex slightly rounded. A specimen from Atoyac is figured.

24. **Gypona spreta,** sp. n. (Tab. XXI. figg. 4, 4 *a*, *b*, ♀.)

Brunneo-testacea, colore obscuriori et dilutiori sparsim irrorata; capite sat parvo, triangulari, ocellis approximatis; pronoto capite distincte latiori, maculis fuscis minutis asperso; scutello leviter rugoso, lineâ utrinque ad basim longitudinali, duobusque punctis ad medium, fuscis; tegminibus punctis quibusdam

nigris, duobus ad medium prope suturam magis conspicuis, instructis; alis fumosis; corpore subtus et pedibus fusco-testaceis.

Mas ignotus.

Femina segmento ultimo ventrali ad medium in lobum semicircularem carinatum producto, lobis lateralibus utrinque ab hoc emarginatione acutâ divisis.

Of a brownish-testaceous colour, obscurely variegated with testaceous and fuscous markings; head rather small, triangularly produced before the eyes and pointed at the apex; ocelli approximate; pronotum distinctly narrower than the head, finely but very distinctly rugose; scutellum with two lines at the sides and two small spots in the centre fuscous; tegmina obscurely variegated with testaceous and fuscous, two dark spots in the centre near the suture, and a few on each side of these, being most conspicuous; legs and underside fusco-testaceous.

Male unknown. *Female* with the last ventral segment produced in the middle in a semicircular lobe, which is strongly carinate longitudinally; the side-lobes are shorter and narrower than this, and are separated from it by deep, sharp excisions.

Long. 12 millim.; lat. ad hum. 4 millim.

Hab. GUATEMALA, Cerro Zunil, Las Mercedes (*Champion*).

25. **Gypona miliaris.**

Gypona miliaris, Stål, Stett. ent. Zeit. xxv. p. 83[1]; Spångb. Bihang till K. Sv. Vet.-Ak. Handl. v. 3, p. 73[2].

Hab. MEXICO, Vera Cruz[1 2] (*Mus. Holm. & Mus. Vind. Cæs.*), Teapa in Tabasco (*H. H. Smith*).

In the female of the species belonging to the Stockholm Museum the last ventral segment is gently trisinuate at the apex, with a broad and somewhat produced median lobe; in our single specimen of the same sex the sinuation is rather more marked.

26. **Gypona atitlana,** sp. n. (Tab. XXI. figg. 5, 5 *a*, *b*, ♂.)

Oblonga; capite parvo, pronoto multo angustiori, vix producto, testaceo, notis duabus ad basim nigris, ocellis valde approximatis, lineâ fuscâ separatis; pronoto dense fusco-irrorato; scutello magno, variegato; tegminibus testaceis dense irroratis, venis rufo-brunneis; corpore subtus cum pedibus testaceis, segmentis abdominis lineâ nigrâ mediâ instructis.

Mas segmento ultimo ventrali longo, apice fere recto, vix rotundato.

Femina ignota.

A dark-looking species, owing to the thick and strong variegation and the irroration of the pronotum, scutellum, and tegmina; head small, much narrower than the pronotum, very little produced if viewed from the side, with the ocelli closely approximate; scutellum strongly marked with fuscous; tegmina with the ground-colour whitish, and the veins brown or reddish-brown, the interspaces filled with strong markings; legs and underside testaceous, the segments of the abdomen with a narrow, black, central band.

Male with the last ventral segment of the abdomen considerably longer than the penultimate, almost straight.

Female unknown.

Long. 9 millim.; lat. ad hum. 3 millim.

Hab. PANAMA, Volcan de Atitlan 2500 to 3000 feet (*Champion*).

The head is very bluntly produced and the species in this respect is almost transitional.

27. **Gypona alborорata,** sp. n. (Tab. XXI. figg. 6, 6 *a*, *b*, ♀.)

Læte castanea, nitida; capite sat longo, angusto, leviter producto, ocellis valde approximatis; pronoto fusco irrorato; tegminibus notis flavo-albidis irregularibus aspersis; corpore subtus pedibusque testaceis.

Of a bright castaneous colour, with the head rather long and comparatively narrow and the ocelli very closely approximated; pronotum irrorated with fuscous; tegmina with irregular, scattered, whitish-yellow spots; underside and legs testaceous.

Long. 9 millim.; lat. ad hum. 3 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

28. **Gypona jansoni,** sp. n. (Tab. XXI. figg. 7, 7 *a*, *b*, ♀.)

Oblonga, brunnea, colore dilutiori variegata, partibus anticis plerumque testaceis; capite testaceo, magno, ante oculos producto, antice rotundato, ocellis inter se quam ab oculis distincte magis remotis; pronoto testaceo, antice brunneo maculato, paullo capite longiori; scutello variegato; elytris fusco-brunneis, præsertim ad latera testaceo variegatis; abdomine supra brunneo; corpore subtus cum pedibus testaceis, plus minusve infuscatis.

Femina segmento ultimo ventrali arcuatim emarginato, in medio breviter lobato, lobo ad apicem minute emarginato.

Oblong; head testaceous, variegated with darker colour, narrower than the pronotum, produced before the eyes, which are prominent and rounded in front; ocelli plainly nearer to the eyes than to one another; pronotum testaceous, with brown markings in front and obscure reddish-brown variegation behind, transversely rugose and very remotely punctured; scutellum with the anterior angles broadly fuscous, the extreme apex of the angles being testaceous, central part testaceous, with fuscous variegation; tegmina fuscous-brown, variegated with lighter brown and testaceous, especially at the sides; abdomen fuscous-brown above; underside and legs dark testaceous, the posterior knees and the apex of the posterior tibiæ, and also the apex of the abdomen and the ovipositor, infuscate.

Female with the last ventral segment of the abdomen emarginate in a rather deep arc, shortly lobed in the middle, and with the lobe minutely emarginate at the apex.

Long. 9 millim.; lat. ad hum. 3 millim.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*).

The specimen from Teleman, a male, is much discoloured, but it seems to belong to this species. The Nicaraguan insect, which we figure, is a female.

29. **Gypona marmorata,** sp. n. (Tab. XXI. figg. 8, ♂; 9, 9 *a*, *b*, ♀.)

Capite pronotoque testaceis, illo sat magno, producto; oculis vix prominulis, ocellis haud approximatis, lineâ centrali in feminâ deficiente, maculisque duabus parvis ad basim fuscis; pronoto notis minutis fuscis adsperso, antice fusco notato; scutello testaceo, basi vel angulis basalibus late fuscis; tegminibus angustis, venis testaceis conspicuis, interstitiis hyalinis, fusco regulariter marmoratis; alis fumatis; abdomine supra in mari rufo-flavo, apice fusco, in femina fusco-testaceo ad latera nigro notato; corpore subtus pedibusque testaceis, pectore et ventre ad partem nigrescentibus.

Mas segmento ultimo ventrali penultimo vix longiori, leviter sinuato.

Femina segmento ultimo ventrali utrinque fortiter sinuato ad medium in lobum latum producto.

Head and pronotum testaceous; the former large, produced, much attenuated beneath; the eyes scarcely prominent, the ocelli not approximate; pronotum sprinkled with minute fuscous spots, and with larger dark markings in front; scutellum testaceous, dark at the base or at the basal angles; tegmina narrow, with the veins large and conspicuously marked, regularly irrorated with fuscous or clear brown markings; abdomen above orange, with black tip in the male, fusco-testaceous in the female, with dark spots at the sides; underside and legs testaceous or fusco-testaceous, the former more or less marked with dark colour.

Male with the last ventral segment of the abdomen scarcely longer than the penultimate, almost straight or gently sinuate at the apex.

Female with the last ventral segment strongly sinuate on each side and produced into a wide lobe in the centre.

Long. 8–9 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

I had originally described the male and female of this insect as separate species, but I think that they must be referred to one only.

30. **Gypona teapensis,** sp. n. (Tab. XXI. figg. 10, 10 *a*, *b*, ♂.)

G. marmoratæ affinis, sed capite minore, ocellis magis approximatis, scutello unicolori, et colore tegminum facile distinguenda; pronoto antice fusco notato, sed punctis fuscis minutis deficientibus; tegminibus brunneis obscure variegatis, lineâ ad costam abbreviatâ fuscatâ; abdomine supra testaceo; corpore subtus cum pedibus dilute testaceis.

Mas segmento ultimo ventrali penultimo multo longiori, fere recto.

Allied to *G. marmorata*, but with the head smaller and the ocelli more approximate; pronotum unicolorous, with a few obscure dark markings in front; scutellum unicolorous; tegmina subhyaline, suffused with rich brown, and with an abbreviated line on the costal margin and a few small scattered markings darker; on the disc just opposite the apex of the scutellum is an obscure oblique line of small testaceous spots, and there are other small testaceous spots behind these; wings only slightly smoky; abdomen testaceous above; underside and legs light testaceous.

Male with the last ventral segment much longer than the penultimate, almost straight.

Long. 8 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

One male.

31. **Gypona conspersa.**

Gypona conspersa, Spångb. Bihang till K. Sv. Vet.-Akad. Handl. v. 3, p. 60[1].

Hab. Mexico[1].

In this species the head is slightly depressed above and below. The female has the last ventral segment of the abdomen bisinuate, with the central lobe rather broad and very obtuse.

32. **Gypona adspersa.**

Gypona adspersa, Stål, Öfv. Vet.-Ak. Förh. 1854, p. 252[1].

Hab. Mexico, San Marcos (*Bilimek*).—Brazil, Minas Geraes[1].

The last ventral segment in the female of this species is very feebly bisinuate at the apex, and slightly emarginate in the middle. There are several *Gyponæ* in our collection which closely resemble *G. adspersa*, but I cannot identify any of them with the single specimen that I have seen of it; they nearly all have the ocelli closely approximate, instead of being situated at a considerable distance from one another, as in the present species.

33. **Gypona mystica.**

Gypona mystica, Spångb. Bihang till K. Sv. Vet.-Akad. Handl. v. 3, p. 71 [1].

Hab. Mexico [1].—Colombia, Bogota [1].

This species, like the following, does not appear to be represented in our collection. It is of a pale testaceous colour, variegated with ferruginous; the head is moderately produced; in the female the last ventral segment is slightly bisinuate at the apex, and has a strong lobe in the centre, which is feebly sinuate behind. Length 9 millim.

34. **Gypona fraudulenta.**

Gypona fraudulenta, Spångb. Ent. Tidskr. 1883, p. 108 [1].

Hab. Mexico (*Bilimek, in Mus. Vind. Cæs.* [1]).

A rather small form (length 6·75 millim.), with the head strongly produced and narrowed, if viewed from the side, the vertex large and broad and almost as long as the pronotum; in the female the last ventral segment is bisinuate at the apex, with a rather broad and subtruncate central lobe.

35. **Gypona adusta,** sp. n. (Tab. XXI. figg. 11, 11 *a*, *b*, ♀.)

Capite pronotoque testaceis, illo sat magno, antice rotundato, lineâ centrali obscuriori antice abbreviato, basim attingente, instructo, oculis vix prominulis, hoc capite latiori, maculis duabus vel lineis antice fuscis, colore obscuriori irrorato; scutello dilute testaceo ad medium, et ad angulos basales late, brunneo; tegminibus nigro- brunneo- castaneo- hyalino-variegatis; alis fumatis; abdomine supra flavo-brunneo, apice fuscato; corpore subtus cum pedibus dilute testaceis, his ad partem fuscis.

Mas ignotus. *Femina* segmento ultimo ventrali sinuato, ad medium in lobum brevem latum producto.

Head and pronotum testaceous; the former rather large, much flattened underneath, the ocelli rather far apart, the eyes scarcely prominent; pronotum broader than the head, variegated with light reddish-brown, and with a small dark spot or line on each side in front; scutellum testaceous, with the basal angles broadly brown; tegmina hyaline, thickly variegated with rich brown markings, inclining in some parts to black; abdomen yellowish-brown above, more or less infuscate at the apex; underside and legs testaceous, the knees and the apex of the tibiæ, and the front tibiæ almost entirely, fuscous.

Male unknown. *Female* with the last ventral segment sinuate and produced in the middle into a broad short lobe, which has a more or less distinct fold in the centre.

Long. 9–10 millim.; lat. ad hum. 3 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

36. **Gypona scutellata,** sp. n. (Tab. XXI. figg. 12, 12 *a*, *b*, ♀.)

Capite pronotoque testaceis, illo parvo, ocellis conspicuis, haud approximatis, hoc capite multo angustiori, antice distincte fusco-notato; scutello magno, testaceo, fusco notato; tegminibus hyalinis, venis testaceis, interstitiis irregulariter fusco notatis; abdomine supra rufo-brunneo; corpore subtus et pedibus testaceis, ad partem brunneis, vel fere totis rufo-brunneis.

Mas ignotus. *Femina* segmento ultimo ventrali levissime et late sinuato, fere recto.

Head and pronotum testaceous; head small, much narrower than the pronotum, with the ocelli large, distinctly nearer to the eyes than to each other, and with two more or less distinct dark spots just behind these at the base; pronotum strongly narrowed towards the apex, with large dark markings on the sides in front;

scutellum testaceous, with the basal angles broadly infuscate, the extreme corners being light, and with two dark spots on the disc; tegmina hyaline, with testaceous veins and irregular dark spots in the interspaces, a rather large irregular patch near the middle being the most conspicuous; wings slightly smoky; abdomen reddish-brown above; underside and legs testaceous, with the pygofer, the sides of the chest, and more or less of the tibiæ and tarsi, dark, or almost entirely reddish-brown.

Male unknown. *Female* with the apex of the last ventral segment very slightly and broadly sinuate, almost straight.

Long. 9 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. MEXICO, Amula and Omilteme in Guerrero 6000 to 8000 feet (*H. H. Smith*).

This species has the head very slightly produced, if viewed from the side, and may almost be regarded as a link between the two sections of the genus.

37. **Gypona abjecta,** sp. n. (Tab. XXI. figg. 13, 13 *a*, *b*, ♀.)

Fusco-testacea; capite sat brevi, oculis magnis, ocellis inter se quam ab oculis paullo minus distantibus; capite, pronoto et scutello subtiliter nigro-irroratis; tegminibus areolis testaceo notatis, venis duabus in disco fusco inclusis, conspicuis; alis fuscis; abdomine fusco; pedibus testaceis, nigro notatis.

Mas segmento ultimo ventrali penultimo vix longiori, margine apicali subtruncato, ad medium minute emarginato, lineâ longitudinali elevatâ pone emarginationem instructo.

Femina segmento ultimo ventrali late et profunde emarginato, emarginatione ad medium lobatâ.

Fusco-testaceous, with the head, pronotum, and scutellum irrorated with minute black specks, the pronotum with larger markings at the anterior angles; head short, ocelli rather nearer to each other than to the eyes; tegmina with the areas marked with testaceous, and with two transverse veins on the centre of the disc bounded with fuscous; scutellum with two dark triangular spots at the base; wings fuscous; abdomen fuscous above; underside and legs testaceous, variegated with fuscous.

Male with the last ventral segment of the abdomen a little longer than the penultimate, with the apical margin subtruncate, furnished with a minute emargination in the centre, behind which there is an elevated, smooth, longitudinal line.

Female with the last ventral segment broadly and deeply emarginate, with a short and broad lobe in the centre of the emargination.

Long. 7 millim.; lat. 2 millim.

Hab. MEXICO, Tierra Colorada in Guerrero, Teapa in Tabasco (*H. H. Smith*).

We figure a specimen from Teapa.

38. **Gypona proscripta,** sp. n. (Tab. XXI. figg. 14, 14 *a*, *b*, ♀.)

Sat robusta, testacea vel rufo-testacea; capite sat brevi, haud attenuato, ocellis inter se quam ab oculis vix longius distantibus; pronoto plus minusve nigro irrorato, punctis quatuor vel sex nigris ad marginem apicalem dispositis; scutello magno, colore variante; tegminibus nigro irroratis, maculis quibusdam majoribus immixtis; alis fuscis; corpore subtus pedibusque dilute testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali late et fere recte et haudquaquam profunde emarginato vel levissime sinuato.

A somewhat short and stout, testaceous species, with the head not attenuated and very blunt in front, if viewed from the side, and the ocelli slightly nearer to the eyes than to each other, separated by a well-marked central line and with or without a black spot at the margin behind each of them; pronotum speckled with black, with four or six small dark spots near the anterior margin, strongly striated transversely; tegmina speckled with black, with larger and variable scattered dark markings; wings fuscous; underside and legs light testaceous, the upperside of the abdomen rufous.

Male unknown. *Female* with the last segment of the abdomen broadly and very shallowly emarginate, the line of the emargination being slightly sinuate.
Long. 8 millim.; lat. ad hum. $2\frac{1}{2}$ millim.

Hab. Mexico, Cuernavaca in Morelos, Atoyac in Vera Cruz, Amula, Tepetlapa, and Chilpancingo in Guerrero (*H. H. Smith*).

Our specimens differ somewhat *inter se*, but I have not been able to separate them. An example from Atoyac is figured.

39. **Gypona dohrni.**

Gypona dohrni, Stål, Stett. ent. Zeit. xxv. p. 82[1].

Hab. Mexico[1], Orizaba (*Mus. Holm.; Bilimek, in Mus. Vind. Cæs.*).

This appears to be a somewhat obscure species, with no very strongly marked characters. I cannot find an example in our collection, although there are several forms closely allied to it. The head, if viewed from the side, is very blunt and scarcely produced at all, and the last ventral segment of the abdomen of the female is simply truncate and subrotundate at the apex.

40. **Gypona punctipennis.**

Gypona punctipennis, Stål, Stett. ent. Zeit. xxv. p. 82[1].

Hab. Mexico (*Mus. Holm.*[1]).

I have not seen a specimen of this insect, but it appears to be very closely allied to *G. dohrni*, and may perhaps be synonymous with it.

41. **Gypona hebes,** sp. n. (Tab. XXI. figg. 15, 15 *a*, *b*, ♀.)

Robusta, subparallela, brunnea, antice dilutior; capite brevi, parvo, testaceo vel brunneo-testaceo, oculis magnis, antice rotundato, haud producto, ocellis inter se quam ab oculis magis distantibus; pronoto testaceo vel brunneo-testaceo, nigro antice notato, margine basali late irregulariter fuscato; scutello magno, postice acute producto, brunneo, duabus maculis parvis testaceis pone medium instructis; tegminibus brunneis, plus minusve distincte variegatis; corpore subtus pedibusque fusco-brunneis.
Mas segmento ultimo ventrali fere recto, lineâ ad marginem elevatâ, nitidâ.
Femina segmento ultimo ventrali sat fortiter trisinuato.

A large, broad, robust species, of a lighter or darker brown colour, lighter in front; head small, short, rounded anteriorly, with the ocelli nearer to the eyes than to each other; pronotum strongly striate transversely in the centre, with the sides sloping towards the front, testaceous, with the hinder part irregularly fuscous, and with smaller dark markings near the apex; scutellum large, sharply produced into a point posteriorly, with two small testaceous spots behind the middle; tegmina brown, more or less obscurely variegated with darker and lighter colour; underside brown; legs brown, with darker markings.
Male with the last ventral segment of the abdomen slightly longer than the preceding, with the margin feebly sinuate, almost straight, and with a raised, longitudinal, shining line before the apex.
Female with the last ventral segment, as a rule, rather strongly trisinuate, the central portion of the margin being, however, variable in outline, and sometimes hardly emarginate.
Long. 15 millim.; lat. ad hum. 6–7 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui, David, Caldera (*Champion*).

In facies this species very closely resembles *G. notanda*, but it may be easily known by the shape of the head, if viewed from the side. We figure a specimen from Caldera.

42. **Gypona decorata,** sp. n. (Tab. XXI. figg. 16, 16 *a*, ♂.)

Robusta, sat lata, parallela, fusco- brunneo- albido- testaceo- rufo-variegata; capite brevi, haud producto, antice rotundato, utrinque depresso. ocellis inter se quam ab oculis longius remotis; pronoto sat longo, hoc et capite vittâ mediâ irregulari longitudinali fuscatâ instructo; scutello fusco, rufo-notato; tegminibus parallelis, variegatis; pedibus testaceis, ad partem fuscis et rufis.
Mas segmento ultimo ventrali prælongo, fere recto. *Femina* ignota.

A stout, subparallel, rather broad species, variegated with shades of brown, yellow, reddish, whitish, &c.; head short, rounded in front, with the ocelli further removed from one another than from the eyes, and with an irregular, more or less interrupted, dark longitudinal band, which is continued along the pronotum; scutellum large, rugosely punctured, dark brown, with rufescent spots before and behind, the latter being the most conspicuous; tegmina subparallel, brown, with whitish or testaceous-white markings, the most conspicuous being four irregular spots (two on each side at the margins) and a regular row of three on each near the suture, the apex whitish; underside reddish, with part of the segments black; legs testaceous, variegated with red and fuscous.
Male with the last abdominal segment long. *Female* unknown.
Long. 10 millim.; lat. ad hum. 4 millim.

Hab. Panama, Bugaba (*Champion*).

43. **Gypona vinula.** (Tab. XXI. figg. 17, 17 *a*, *b*, ♀.)

Gypona vinula, Stål, Stett. ent. Zeit. xxv. p. 81 [1].

Hab. Mexico [1] (*Sallé*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

The female of *G. vinula* was unknown to Stål; it has the last ventral segment sinuate at the apex on both sides and strongly, though narrowly, excised in the middle.

Var. **ornata,** n. (Tab. XXI. fig. 18, ♀.)

Capite pronotoque miniato fusco-virescenti variegato, punctis quatuor parvis nigris prope marginem apicalem dispositis.

In this variety the head and pronotum are orange-scarlet, with brownish-green markings; on the front of the pronotum there are four distinct small black spots (the type-form usually has two, but sometimes four are present); the characters of the female are identical with those of the typical *G. vinula*.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

One female specimen.

44. **Gypona propior,** sp. n. (Tab. XXI. figg. 19, 19 *a*, *b*, ♀.)

G. vinulæ valde affinis, sed pronoto immaculato et formatione ultimi segmento ventrali feminæ distinguenda.
Mas segmento ultimo penultimo multo longiori levissime roundato.
Femina margine ultimo segmento ventrali fere recto, vix sinuato, haud ad medium emarginato vel exciso.

Closely allied to *G. vinula*, and only to be distinguished with certainty by the form of the last ventral segment

of the female; the absence of the small black spots seems to be constant, but is, of course, not a character on which to found a new species.

Long. 8–8½ millim.; lat. ad hum. 2½ millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Four males and three females. Perhaps a form of *G. vinula*?

45. **Gypona tergata,** sp. n. (Tab. XXI. figg. 20, ♂; 21, 21 *a*, ♀.)

Capite pronotoque flavo-testaceis; illo sat brevi, ocellis inter se et ab oculis fere æque distantibus, hoc immaculato vel duabus maculis parvis nigris pone ocellos dispositis vel fusco irrorato, fortiter transversim striato; scutello magno testaceo, antice fusco variegato; tegminibus testaceis ad suturam late fusco vel rufo-fusco variegatis; corpore subtus pedibusque dilute testaceis.

Mas segmento ultimo ventrali subtruncato.

Femina segmento ultimo ventrali levissime sinuato, fere recto.

Elongate, subparallel, with the head and pronotum testaceous, the latter with or without two minute black spots in front, and occasionally with larger or smaller markings; scutellum large, variegated with fuscous in front, immaculate behind; tegmina testaceous, with the internal margin broadly dark: when they are joined, these markings form a broad band down the middle, and just at the centre is a more or less distinct dark patch, which makes the band appear denticulate, this becoming less conspicuous or disappearing towards the apex, the veins alone being dark; underside and legs light testaceous.

Male with the last ventral segment subtruncate, somewhat rounded.

Female with the apex of the last ventral segment very gently sinuate, almost straight.

Long. 8–9 millim.; lat. ad hum. 2½–3 millim.

Hab. MEXICO, Orizaba (*Godman, H. H. Smith*), Omilteme and Xucumanatlan in Guerrero 7000 to 8000 feet (*H. H. Smith*); GUATEMALA, Chiacam, San Gerónimo, Cerro Zunil (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

It is possible that the specimens included under *G. tergata* may belong to more than one species, but there are one or two intermediate forms. An example from Omilteme is figured.

46. **Gypona hieroglyphica,** sp. n. (Tab. XXI. figg. 22, 22 *a*, *b*, ♀.)

Dilute testacea; capite brevi, ocellis inter se quam ab oculis vix longius distantibus, oculis prominulis; pronoto punctis quatuor ad marginem apicalem dispositis; tegminibus haud nigro irroratis, maculis quibusdam majoribus sat conspicuis notatis; abdomine supra ferrugineo, subtus cum pedibus dilute testaceo.

Mas ignotus. *Femina* segmento ultimo ventrali leviter sinuato.

Of a light testaceous colour, with four small spots on the apical margin of the pronotum and a few irregular markings on the tegmina black; head short, rounded, the ocelli about as far from one another as from the eyes; scutellum large, with the basal angles fuscous; abdomen ferruginous above, light testaceous beneath.

Male unknown. *Female* with the last ventral segment gently sinuate at the apex.

Long. 6–7 millim.; lat. ad hum. 2 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Cerro Zunil (*Champion*).

Closely allied to *G. proscripta*, and at first described by me as a variety of that species. The Mexican insect is figured.

47. **Gypona notula,** sp. n.

Parva, testacea; capite lato, oculis magnis, ocellis inter se quam ab oculis longius distantibus, haud producto vel attenuato; pronoto antice punctis quibusdam nigris instructo, sat longo; scutello magno, testaceo; tegminibus haud irroratis, sed sparsim fusco vel nigro notatis; corpore subtus pedibusque dilute testaceis.
Mas segmento ultimo ventrali longo ad apicem rotundato.
Femina segmento ultimo ventrali leviter sinuato.

A small testaceous species, with the head broad and not produced, and with bright red ocelli situated nearer to the eyes than to one another; pronotum rather long, with from four to eight small black spots in front; tegmina with irregular fuscous or black markings.
Male with the last ventral segment long, rounded at the apex.
Female with the last ventral segment slightly sinuate.
Long. 6 millim.; lat. ad hum. 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

Two specimens, male and female. Not unlike *G. hieroglyphica*, but smaller and with the ocelli more widely separated.

48. **Gypona bisignata,** sp. n. (Tab. XXI. figg. 23, 23 *a*, *b*, ♀.)

Dilute testacea; capite haud attenuato, ocellis inter se quam ab oculis paulo longius distantibus; pronoto antice nigro-testaceo; scutello fusco variegato; tegminibus nigro sparsim irroratis, maculâ magnâ nigrâ utrinque vix pone medium positâ; pedibus testaceis.
Mas ignotus. *Femina* segmento ultimo ventrali leviter sinuato, fere recto.

Somewhat variable in size; of a light testaceous colour; head comparatively narrow, the ocelli large, situated somewhat nearer to the anterior than to the posterior margins, and a little further separated from one another than from the eyes; pronotum with several dark spots and markings in front, strongly striate transversely; scutellum variegated with fuscous; tegmina with small, scattered, dark spots, which are thicker at the suture, and with a large, dark, irregular patch on each just behind the middle; legs and underside light testaceous, the sides of the chest dark.
Male unknown. *Female* with the apical margin of the last ventral segment almost straight, feebly sinuate and very slightly emarginate in the middle.
Long. 8–9 millim.; lat. ad hum. $2\frac{1}{2}$–3 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*); GUATEMALA, San Gerónimo (*Champion*).

The Guatemalan insect is figured.

49. **Gypona reservanda,** sp. n. (Tab. XXI. figg. 24, 24 *a*, *b*, ♀.)

Fusco-testacea; capite sat longo, sed haud subtus attenuato, ocellis inter se quam ab oculis paullo magis distantibus; pronoto sat fortiter transversim striato, antice nigro notato; tegminibus maculis quibusdam parvis nigris et notâ utrinque majore circulari ad marginem pone medium instructis; corpore subtus pedibusque fuscis.
Mas ignotus. *Femina* segmento ultimo ventrali late sed haud profunde emarginato, sinuato, ad medium leviter exciso.

Fusco-testaceous, with the head somewhat produced and pointed, but not attenuated beneath; ocelli a little further from one another than from the eyes; pronotum with black markings in front; tegmina with a few small dark markings and a rather large semicircular spot on each near the margins behind the middle, the veins not marked; wings fuscous; underside and legs fuscous.

Male unknown. *Female* with the apex of the last ventral segment broadly and shallowly emarginate, and sinuate and slightly excised in the centre.
Long. 7 millim.; lat. ad hum. 2 millim.

Hab. MEXICO, Venta de Zopilote in Guerrero 2800 feet (*H. H. Smith*).

50. **Gypona bohemani.**

Gypona bohemani, Stål, Stett. ent. Zeit. xxv. p. 81 [1]; Spångb. Bihang till K. Sv. Vet.-Ak. Handl. v. 3, p. 52 [2].

Hab. MEXICO, Vera Cruz [1 2] (*Mus. Holm.*).—COLOMBIA, Bogota [2].

I have not seen an example of this insect, and the female is apparently unknown.

51. **Gypona præterita,** sp. n. (Tab. XXI. figg. 25, 25 *a*, *b*, ♀.)

Brunneo-testaceo, capite haud producto, obtuso, ocellis inter se quam ab oculis longius remotis; pronoto lateribus antice sensim rotundatis, fortiter transversim striatis; scutello magno, postice acuminato; tegminibus punctis quibusdam nigris minutis; corpore subtus pedibusque plus minusve fuscatis.
Mas segmento ultimo ventrali brevi fere recto, valvulis brevibus.
Femina segmento ultimo ventrali late et haud profunde emarginato, levissime sinuato.

Brownish-testaceous, with the head not produced and blunt, the ocelli situated nearer to the front than to the basal margin, more distant from one another than from the eyes; pronotum with the sides rounded anteriorly; tegmina with a few minute, irregular, black markings; underside and legs mostly fuscous.
Male with the last abdominal segment and the genital valves short.
Female with the apex of the last ventral segment of the abdomen broadly and shallowly emarginate and very slightly sinuate.
Long. 8 millim.; lat. $2\frac{1}{2}$ millim.

Hab. MEXICO, Atoyac in Vera Cruz (*H. H. Smith*).

In the collection before me there is also a specimen from Teapa which might perhaps be referred to this species.

52. **Gypona extranea,** sp. n.

Castaneo-brunnea, capite brevi, antice obtuso haud attenuato, ocellis inter se quam ab oculis multo magis distantibus; pronoto unicolori, fortiter transversim striato; tegminibus notis quibusdam nigris vix conspicuis, venis ad apicem evidentioribus.
Mas segmento ultimo ventrali penultimo longiori, ad marginem leviter sinuato, in medio denticulato producto.
Femina segmento ultimo ventrali late leviter emarginato.

Short and rather broad, of a castaneous-brown colour; head short, blunt, and not produced, with the ocelli much nearer to the eyes than to one another; pronotum concolorous, strongly striate transversely; tegmina with a few very small and inconspicuous black markings, and the veins marked at the apex; underside and legs fuscous or fusco-testaceous.
Male with the last ventral segment of the abdomen longer than the penultimate, slightly sinuate at the apex, and produced into a small tooth in the centre.
Female with the last ventral segment broadly and shallowly emarginate.
Long. 8–9 millim.; lat. ad hum. 3 millim.

Hab. GUATEMALA, Volcan de Atitlan (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

53. **Gypona exornata,** sp. n. (Tab. XXI. figg. 26, 26 *a*, *b*, ♀.)

Sat robusta, parallela, læte castaneo-brunnea, testaceo et rufo-testaceo variegata; capite brevi, haud producto, antice rotundato, ocellis approximatis, oculis magnis; pronoto testaceo rufo-testaceo variegato, postice brunneo; scutello brunneo, postice albido; tegminibus maculis duabus magnis ad marginem utrinque testaceis, et quibusdam minoribus prope suturam et ad humeros instructis; pedibus rufo-testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali late sed haud profunde sinuatim emarginato.

A somewhat stout, subparallel-sided species, of a bright chestnut-brown colour of different shades; head short, not produced, rounded in front, testaceous, variegated with orange; ocelli approximate; pronotum testaceous, with bright orange markings, and with the hind margin dark brown; scutellum brown, with the hinder part clear yellowish-white; tegmina almost parallel, somewhat rounded at the sides, broadest just behind the middle, with two large testaceous spots on each on the margins, and several small ones near the suture and at the shoulders; legs rufo-testaceous.

Male unknown. *Female* with the last ventral segment broadly emarginate, the emargination being sinuate and not deep.

Long. 7 millim.; lat. ad hum. 3 millim.

Hab. Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

54. **Gypona wallengreni.** (Tab. XXI. fig. 27, ♂.)

Gypona wallengreni, Stål, Stett. ent. Zeit. xxv. p. 82[1]; Spångb. Bihang till K. Sv. Vet.-Ak. Handl. v. 3, p. 51[2].

Hab. Mexico[2] (*Mus. Holm.*[1]); Panama, Volcan de Chiriqui (*Champion*).

Easily known by its very broad, short head and by the wide testaceous border of the dark ferruginous tegmina.

55. **Gypona nana,** sp. n. (Tab. XXI. figg. 28, 28 *a*, *b*, ♀.)

Parva, nitida, castaneo-brunnea, interdum colore obscuriori variegata; capite lato, antice obtuse producto, ocellis inter se quam ab oculis paullo magis distantibus; pronoto sat magno, disco unicolori, vel antice nigro notato, marginibus lateralibus anguste albidis, ad medium transversim striato; scutello magno, postice producto, acuminato; tegminibus margine exteriori albido limbato, limbo nigro-variegato; corpore subtus pedibusque dilute testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali fortiter sinuato ad medium triangulariter exciso.

A very small, shiny, castaneous-brown species, which may at once be known by its size and by the white borders of the pronotum and tegmina, the latter being variegated with black; head broad, the ocelli situated nearer the anterior than the posterior margin, a little more distant from one another than from the eyes; pronotum large, unicolorous, or with dark markings in front; underside and legs light testaceous.

Male unknown. *Female* with the apex of the last ventral segment of the abdomen strongly sinuate and triangularly excised in the centre.

Long. 5 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Panama, Bugaba (*Champion*).

We figure a specimen from Teapa.

56. **Gypona celata,** sp. n. (Tab. XXI. figg. 29, 29 *a*, *b*, ♀.)

Robusta, brunnea; capite brevi, ocellis prope marginem anticam verticis positis, inter se quam ab oculis multo magis distantibus; pronoto fere unicolori, vel notis quibusdam obscurioribus antice instructo, fortiter transversim striato; scutello magno, rugose punctato; tegminibus læte brunneis vel subhyalinis, notis quibusdam parvis nigris, et venis plus minusve præcipue ad apicem fuscatis; pedibus testaceis vel fusco-testaceis.

Mas ignotus. *Femina* segmento ultimo ventrali sinuato, vix in medio producto.

A short and robust species, of a dark castaneous-brown colour; head short, the ocelli placed on the extreme margin of the vertex, much further from one another than from the eyes; pronotum unicolorous or with darker markings in front; scutellum large, produced and pointed behind, with a small testaceous spot in each of the anterior corners; tegmina brown, with the apex almost or entirely hyaline, the veins more or less strongly marked, and with small dark spots at the suture and on the disc, the margins and a band before the apex sometimes darker; legs testaceous or fusco-testaceous.

Male unknown. *Female* with the apex of the last ventral segment of the abdomen sinuate, very slightly produced in the centre.

Long. 6–7 millim.; lat. ad hum. $2\frac{1}{2}$–3 millim.

Hab. Panama, David, Caldera, Bugaba (*Champion*).

It is possible that the specimens referred to this species may have to be divided, but this cannot be done satisfactorily without more material.

57. **Gypona resima,** sp. n. (Tab. XXI. figg. 30, 30 *a*, *b*, ♀.)

Brevis, castanea, nitida; capite brevissimo, ocellis ad marginem verticis positis; pronoto fortiter transversim striato, fere unicolori; scutello magno, tegminibus subhyalinis, apice dilutiori, punctis nigris quatuor vel quinque utrinque instructis.

Mas ignotus. *Femina* segmento ultimo ventrali utrinque fortiter sinuato, ad medium lobato.

A short, stout, shining, castaneous species; head very short, the ocelli placed just on or close to the margin of the vertex; pronotum strongly striate transversely, unicolorous; scutellum very large, pointed behind; tegmina subhyaline, with four or five small black spots on each; upper surface of abdomen rufous, underside and legs light testaceous.

Male unknown. *Female* with the apex of the last ventral segment deeply sinuate on each side, the central portion being produced into a strong lobe, the tip of which is minutely emarginate or subtruncate.

Long. 7 millim.; lat. ad hum. 2 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

STRAGANIA.

Stragania, Stål, Bidrag till Rio Janeiro-Traktens Hemipter-Fauna, ii. p. 49 (1858).

Stål, in his work on the Rio Janeiro Hemiptera, treats *Stragania* as a "new subgenus" of *Gypona*, and places under it three small insects of 4–$4\frac{1}{2}$ millim. in length, which he names *Gypona ornatula*, *G. divisa*, and *G. pallescens*. These latter are said to resemble the species of the genus *Zinneca*, Am. et Serv., in size, and he is of opinion that they ought perhaps to be separated from *Gypona* on account of the structure of the tegmina and scutellum ("scutello apice haud acute producto, longitudine latiore; tegminibus pellucidis, breviter pilosulis vel setulosis, non nisi apice venulis tribus longitudinalibus brevibus instructis"). In the 'Hemiptera Mexicana,'

published six years afterwards (1864), he describes two species of the genus from Mexico under the generic name of *Straganía*. We do not possess an example of either of these in our collection, and I include them here under the Gyponidæ on Stål's authority and append his descriptions. They are small insects, with hyaline or subhyaline tegmina, and resemble Jassidæ rather than Gyponidæ.

1. Stragania humilis.

Stragania humilis, Stål, Stett. ent. Zeit. xxv. p. 85 [1].

"Griseo-albida; fronte, loris, medio verticis thoracisque, scutello, apice excepto, macula magna mesostethii basique coxarum posticarum nigris; tegminibus breviter fusco-pilosis; capite thorace vix angustiore. ♀. Long. 4 millim."

Hab. Mexico (*coll. Signoret* [1], *Mus. Vind. Cæs.*).

2. Stragania misella.

Stragania misella, Stål, Stett. ent. Zeit. xxv. p. 85 [1].

"Flavo-testacea, subtus cum pedibus stramineo-albida; tegminibus sordide hyalinis, fusco-pilosulis, scutello, clavo, apice excepto, maculaque subapicali dorsi abdominis nigris; scutelli maculis discoidalibus flavo-testaceis; capite thoracis parte posteriore paullo angustiore. ♂. Long. 4 millim."

Hab. Mexico, Vera Cruz (*Mus. Holm.* [1]).

Note.—Since the publication of the preceding page, I find that Stål subsequently included *Straganía* under the Jassidæ as being synonymous with *Macropsis*, Lewis [Trans. Ent. Soc. i. p. 49 (1834)]; the alteration appears in very small type in his 'Hemiptera Africana,' iii. p. 126.

SUPPLEMENT.

The following species have been described or recorded from Central America since the publication of the preceding pages.

Membracidæ.

1. **Membracis nebulosa.**

Membracis nebulosa, Buckton, Mon. Membr. p. 36, t. 2. fig. 8 (1901) [1].

Hab. Costa Rica [1].

This species seems somewhat doubtful, and Mr. Buckton, in his Monograph, marks it with a note of interrogation. The specimen on which it is described is evidently imperfect, and it is probably one of the many varieties of *M. mexicana*, Guér.

2. **Membracis (Phyllotropis) dorsata.**

Membracis dorsata, Fabr. Syst. Rhyng. p. 11 (1803) [1].

Phyllotropis dorsata, Buckton, Mon. Membr. p. 40 (1901) [2].

Hab. Central America [2].—South America [1].

According to Buckton, there are several specimens of this insect from Central America in the National Collection; but I think there must be some mistake about this locality, as I have carefully examined all the examples in the Museum collection. *Phyllotropis* is, at most, a subgenus of *Membracis*. The same author (*l. c.* pp. 35, 41) places *M. mexicana* under both *Membracis* and *Phyllotropis*; on page 40 he gives my *Membracis humilis* as a synonym of *Phyllotropis trifasciata*, Stål, but on page 43 he describes the species as *Phyllotropis humilis*, and copies the figure from the 'Biologia' (t. 1. fig. 6) on plate iv. fig. 3.

3. **Euchenopa tesselata.**

Euchenopa tesselata (*tessilata* in error), Buckton, Mon. Membr. p. 49, t. 6. fig. 1 (1901) [1].

Hab. Mexico [1].—South America, Rio Janeiro [1].

Described from broken specimens.

4. **Sphongophorus inelegans.**

Sphongophorus inelegans, Buckton, Mon. Membr. p. 82, t. 15. fig. 6 (1901) [1].

Hab. Mexico [1] (*Hope coll., Oxford*).

5. **Umbonia articularia.**

Umbonia articularia, Buckton, Mon. Membr. p. 89, t. 17. figg. 7, 8 (1901) [1].

Hab. British Honduras, Belize [1].

6. **Umbonia ermanni.**

Umbonia ermanni, Griffini, Boll. Mus. Torino, x. no. 201, p. 6 (1895) [1].

Hab. Mexico [1].

7. **Tropidarnis robustus.**

Tropidarnis robustus, Buckton, Mon. Membr. p. 114, t. 24. figg. 5, 5 *a* (1902) [1].

Hab. Mexico [1] (*Hope coll., Oxford*).

I very much doubt if this is distinct from *T. tectigera*, Fowler.

8. **Aconophora obfuscata.**

Aconophora obfuscata, Buckton, Trans. Linn. Soc., Zool. (2) ix. p. 331, t. 21. figg. 5, 5 *a* (1905) [1].

Hab. Mexico [1].

9. **Hyphinoë proclivis.**

Hyphinoë proclivis, Distant, Trans. Ent. Soc. 1900, p. 695 [1].

Hab. Costa Rica, Talamanca (*Pittier* [1]).

10. **Hyphinoë thoracata.**

Hyphinoë thoracata, Distant, Trans. Ent. Soc. 1900, p. 695 [1].

Hab. Costa Rica, Guaitil de Pirris (*Biolley* [1]).

Both these species of *Hyphinoë* are allied to *H. cornuta*, Dist.

11. **Hyphinoë subfusca.**

Hyphinoë subfusca, Buckton, Mon. Membr. p. 122, t. 25. figg. 6, 6 *a* (1902) [1].

Hab. Panama, Volcan de Chiriqui [1].

Allied to *Hyphinoë tau*, var. *atitlana*, Fowler.

12. **Entaphius funebris.**

Entaphius funebris, Buckton, Mon. Membr. p. 134, t. 28. figg. 6, 6 *a*, *b* (1902) [1].

Hab. Guatemala, San Gerónimo [1].

Mr. Buckton says that the type of his new genus *Entaphius*, *E. funebris*, is in my collection. He apparently described it from an insect which, as far as I remember, I passed over, without close examination, as an imperfect specimen and not suitable

for description; as, however, the type is not among the insects returned to me after Mr. Buckton's death, I cannot say anything further about it. I have some recollection of noticing the peculiar venation of the tegmina.

13. **Darnoides flavescens.**

Darnoides flavescens, Baker, Canad. Ent. xxxix. p. 117 (1907) [1].

Hab. British Honduras, Belize [1].

14. **Heteronotus vulnerans.**

Combophora vulnerans, Germ. Rev. Silb. i. p. 228 (1833) [1].

Heteronotus vulnerans, Buckton, Mon. Membr. p. 141, t. 30. fig. 1 (1902) [2].

Hab. Mexico, Vera Cruz [2]; Guatemala [2]; Panama [2].—Brazil [1 2].

15. **Poppea succinea.**

Poppea succinea, Buckton, Trans. Linn. Soc., Zool. (2) ix. p. 331, t. 21. figg. 7, 7 *a* (1905) [1].

Hab. Mexico [1] (*Mus. Madrid*).

16. **Ceresa nitens.**

Ceresa nitens, Buckton, loc. cit. p. 332, t. 21. figg. 9, 9 *a* .

Hab. Panama, Chiriqui [1] (*Mus. Madrid*).

17. **Gerridius abbreviatus.**

Gerridius abbreviatus, Baker, Canad. Ent. xxxix. p. 114 (1907) [1].

Hab. Nicaragua, San Marcos [1].

Mr. Baker also records *Ischnocentrus niger* (anteà, p. 155) from the same locality.

18. **Trapezoida hirsuta.**

Trapezoida hirsuta, Buckton, Trans. Linn. Soc., Zool. (2) ix. p. 335, t. 22. figg. 11, 11 *a, b* (1905) [1].

Hab. Central America [1] (*Mus. Madrid*).

This new genus is said to be nearly related to *Centrotus*.

19. **Combophora besckii.**

Combophora besckii, Germ. Rev. Silb. iii. p. 253 (1835) [1]; Buckton, Mon. Membr. p. 145, t. 31. figg. 1, 1 *a–c*, 2, 2 *a* (1902) [1].

Hab. Central America [2].—Brazil [1], Amazons [2].

I feel very doubtful as to the Central-American habitat of this insect; if correct, it is the first record of the occurrence of a species of *Combophora* from our region.

20. **Acutalis flavo-nervosa.**

Acutalis flavo-nervosa, Buckton, Mon. Membr. p. 176, t. 37. fig. 5 (1902) [1].

Hab. Mexico, Chilpancingo in Guerrero [1].

Mr. Buckton says (*v. supra*, p. 177) it is a difficult thing to say if this insect is or is not *A. fusco-nervosa*, Fairm.; it is certainly nothing more than a colour-variety of that species.

21. **Polyglypta godmani.**

Polyglypta godmani, Distant, Ent. Monthly Mag. xvi. p. 11 (1879) [1].
Polyglypta costata, Fowler (part.), Biol. Centr.-Am., Rhynch. Homopt. ii. p. 122 (1896) [2].
Polyglypta godmani, Distant, Trans. Ent. Soc. 1900, p. 694 [3].

Hab. Costa Rica, Irazu (*Rogers* [1]), San José (*Biolley* [2]).

Mr. Distant has again revived this species, which I have treated as synonymous with *P. costata*, Fairm.; the question is discussed on page 123 of the present volume.

22. **Entylia mœsta.**

Entylia mœsta, Buckton, Trans. Linn. Soc., Zool. (2) ix. p. 332, t. 21. figg. 11, 11 *a* (1905) [1].

Hab. Mexico [1] (*Mus. Madrid*).

23. **Entylia œdipus.**

Entylia œdipus (*œdipus*), Buckton, Mon. Membr. p. 183, t. 39. figg. 3, 3 *a*, *b* (1903) [1].

Hab. Mexico, Chilpancingo in Guerrero [1].

This name cannot stand, as the insect is identical with *E. mira*, Butl. (Cist. Ent. ii. p. 211, t. 3. fig. 7); *E. mira* itself is a variety of *E. sinuata*, F., and as such I have figured it on Plate VIII. fig. 12, of the present volume.

24. **Adippe hæretica.**

Adippe hæretica, Distant, Trans. Ent. Soc. 1900, p. 694 [1].

Mr. Distant is of opinion that his *Adippe maculata* [Ent. Monthly Mag. xvi. p. 11 (1879)] is distinct from the insect to which I have given that name (*anteà*, p. 134, t. 8. figg. 15, 15 *a*), and assigns the name *A. hæretica* to the species figured in this work.

25. **Leptocentrus canescens.**

Leptocentrus canescens, Buckton, Mon. Membr. p. 234, t. 53. fig. 1 (1903) [1].

Hab. British Honduras, Belize [1].

CERCOPIDÆ.

26. **Sphenorhina biolleyi.**

Sphenorhina biolleyi, Distant, Trans. Ent. Soc. 1900, p. 693 [1].

Hab. COSTA RICA, La Laguna (*Biolley* [1]).

27. **Sphenorhina quota.**

Sphenorhina quota, Distant, Trans. Ent. Soc. 1900, p. 693 [1].

Hab. COSTA RICA, La Laguna (*Biolley* [1]).

28. **Sphenorhina perfecta.**

Sphenorhina perfecta, Walk. Ins. Saund. p. 90 (1858) [1]; Distant, Trans. Ent. Soc. 1900, p. 693 [2].

Hab. COSTA RICA, Las Delicias (*Biolley* [2]).—SOUTH AMERICA [1].

29. **Clastoptera bimaculata.**

Clastoptera bimaculata, Baker, Ent. News, xi. p. 464 (1900) [1].

Hab. MEXICO, Vera Cruz (*Heyde* [1]).

The following corrections must be made :—

Gargaropsis, Fowler (*anteà*, p. 167), is, apparently, not a Membracid; according to Ball [Psyche, ix. pp. 128–130 (1900)] it is synonymous with *Macropsis*, Lewis, but this seems doubtful. It is very different from *Stragania*, which Stål considers synonymous with the same genus.

Salvina Chinaia

Tettigonia dorsisignata and *T. rubescens* (anteà, p. 282) must be referred to the Jassidæ, but their generic location is at present doubtful; in some of these insects there are bright spots between the eyes, which look like ocelli, unless closely examined, and are very misleading.

INDEX.

[Names in small capitals refer to Families, &c.; those in roman type to the chief reference to each species included in the work; those in italics to species incidentally mentioned, synonyms, &c.]

ACANALONIA, i. 46, 146.
Acanalonia, i. 45, 47.
—— affinis, i. 48.
—— cælata, i. 47.
—— concinnula, i. 49.
—— decens, i. 46.
—— *decens*, i. 47.
—— delicatula, i. 49.
—— dubia, i. 46.
—— *dubia*, i. 47.
—— gaumeri, i. 48.
—— inclinata, i. 146.
—— panimæ, i. 47.
—— pinniformis, i. 48.
—— producta, i. 46.
—— *servillei*, i. 45.
—— virescens, i. 49.
—— *virescens*, i. 48.
ACANALONIINÆ, i. 45.
Acanonia, i. 46.
—— *decens*, i. 46.
—— *producta*, i. 46.
—— *virescens*, i. 49.
ACHILIDÆ, i. 103.
Achilina, i. 103.
Achilius bicinctus, i. 105.
Achilus bicinctus, i. 104.
—— *dilutus*, i. 104.
ACMONIA, i. 34, 145.
Acmonia, i. 146.
—— (?) procris, i. 35.
—— (?) sanguinalis, i. 145.
—— (?) trivia, i. 35.
ACONOPHORA, ii. 61.
Aconophora, ii. 12, 45, 47, 48, 49, 62, 67, 70, 72.
—— *æneosparsa*, ii. 66.
—— caliginosa, ii. 62.
—— compressa, ii. 65.
—— *concolor*, ii. 65, 66, 67, 68.
Aconophora disparicornis, ii. 69.
—— ensata, ii. 68.
—— femoralis, ii. 70.
—— *femoralis*, ii. 72.
—— ferruginea, ii. 69.
—— fusiformis, ii. 69.
—— *fusiformis*, ii. 70.
—— *gilvipes*, ii. 65.
—— gladiata, ii. 71.
—— *gladiata*, ii. 48.
—— *guttifera*, ii. 63.
—— *hadina*, ii. 66, 67.
—— *hastata*, ii. 67, 68, 69.
—— *incumbens*, ii. 67.
—— laminata, ii. 63.
—— *lata*, ii. 48, 68.
—— laticornis, ii. 65.
—— *laticornis*, ii. 66, 68.
—— marginata, ii. 65.
—— *marginata*, ii. 63, 66.
—— ——, var. æneosparsa, ii. 66.
—— mexicana, ii. 62.
—— minuta, ii. 72.
—— nigra, ii. 67.
—— *nigra*, ii. 69.
—— nigricornis, ii. 64.
—— *nigrivitta*, ii. 68.
—— nitida, ii. 66.
—— *nitida*, ii. 67.
—— obfuscata, ii. 319.
—— obtusiuscula, ii. 71.
—— *obtusiuscula*, ii. 72.
—— pallescens, ii. 71.
—— *pallescens*, ii. 48, 62, 65, 72.
—— pinguis, ii. 64.
—— *pinguis*, ii. 68.
—— prunitia, ii. 68.
—— *prunitia*, ii. 69.
—— pubescens, ii. 63.
—— *pugionata*, ii. 66.
Aconophora pugnax, ii. 65.
—— sinanjensis, ii. 70.
—— *spathata*, ii. 63.
—— *stabilis*, ii. 62, 65, 66.
—— subinermis, ii. 67.
—— temaxia, ii. 70.
—— *tenuicornis*, ii. 64.
—— variipennis, ii. 67.
—— viridescens, ii. 63.
—— viridula, ii. 71.
ACONOPHOROIDES, ii. 47.
Aconophoroides, ii. 31, 48, 136.
—— gladiator, ii. 48.
—— *gladiator*, ii. 47.
ACRÆPHIA, i. 30, 144.
—— astralis, i. 145.
—— crepusculascens, i. 144.
—— fastuosa, i. 31.
—— montezuma, i. 144.
—— *montezuma*, i. 145.
—— perspicillata, i. 31.
—— simillima, i. 145.
ACROBELUS, ii. 213.
—— attenuatus, ii. 213.
ACUTALIS, ii. 113.
Acutalis, ii. 81, 82, 83, 85, 88, 95, 111, 116, 121.
—— *balteata*, ii. 116.
—— *binaria*, ii. 117, 120.
—— flavo-nervosa, ii. 321.
—— fusco-nervosa, ii. 114.
—— *fusco-nervosa*, ii. 111, 112, 321.
—— *geniculata*, ii. 121.
—— *lugubrina*, ii. 120, 121.
—— *modesta*, ii. 121.
—— *mœsta*, ii. 117, 121.
—— nigrinervis, ii. 114.
—— *nigrolineata*, ii. 120.
—— *plagiata*, ii. 121.
—— *semialba*, ii. 121.

Acutalis semipallida, ii. 121.
—— *variabilis*, ii. 117.
Adana, i. 82.
—— *westwoodi*, i. 82.
ADEXIA, i. 147.
—— erminia, i. 147.
ADIPPE, ii. 133.
Adippe, ii. 89, 136.
—— concinna, ii. 135.
—— grisea, ii. 136.
—— hæretica, ii. 321.
—— histrio, ii. 135.
—— inæqualis, ii. 136.
—— inconspicua, ii. 135.
—— maculata, ii. 134.
—— *maculata*, ii. 321.
—— pardalina, ii. 134.
—— *vicina*, ii. 133.
—— zebrina, ii. 133.
Æchmophora, ii. 21, 23, 25.
—— *coronata*, ii. 25, 26.
—— *curvicornis*, ii. 23.
—— *elephas*, ii. 25.
—— *recticornis*, ii. 25.
Ætalion, ii. 170.
Æthalia, ii. 170.
—— *reticulata*, ii. 171.
ÆTHALION, ii. 170.
Æthalion, ii. 1, 2, 148, 171.
—— *albo-nervosum*, ii. 171.
—— *bivittatum*, ii. 171.
—— *dilatatum*, ii. 173.
—— gratum, ii. 173.
—— nervoso-punctatum, ii. 172.
—— ——, var. minor, ii. 172.
—— *parallelum*, ii. 171.
—— quadratum, ii. 172.
—— reticulatum, ii. 171.
—— *reticulatum*, ii. 172.
—— ——, var. albo-nervosum, ii. 171.
—— ——, var. vitticolle, ii. 171.
—— *simile*, ii. 171.
—— *vicinum*, ii. 171.
—— *vitticolle*, ii. 171.
ÆTHALIONINÆ, ii. 170.
ALCMEONE, ii. 72.
Alcmeone, ii. 49, 75.
—— godmani, ii. 72.
AMALIVACA, i. 29.
—— fucata, i. 30.
AMANTIA, i. 30.
Amantia, i. 29.
—— imperatoria, i. 30.
AMASTRIS, ii. 92.
Amastris, ii. 84, 88, 136, 140.
—— obtegens, ii. 92.
Amastris obtegens, ii. 136.
—— *simillima*, ii. 92.
—— *stâli*, ii. 94.
AMBLYCENTRUS, ii. 158.
Amblycentrus, ii. 146, 153.
—— pubescens, ii. 158.
AMBLYDISCA, ii. 209.
Amblydisca, ii. 212, 213, 220.
—— aulæata, ii. 212.
—— bugabensis, ii. 210.
—— coriacea, ii. 212.
—— fluctuosa, ii. 211.
—— gigas, ii. 212.
—— lugubris, ii. 210.
—— multiguttata, ii. 212.
—— *multiguttata*, ii. 213.
—— *multimaculata*, ii. 212.
—— nitidipennis, ii. 210.
—— postfumata, ii. 210.
—— *postfumata*, ii. 211.
—— rubriventris, ii. 209.
—— salvini, ii. 209.
—— tapes, ii. 211.
—— *tapes*, ii. 212.
AMPHISCEPA, i. 118.
Amphiscepa, i. 114.
—— calida, i. 118.
—— *malina*, i. 118.
—— *nodipennis*, i. 118.
—— subpellucida, i. 119.
AMYCLE, i. 25, 43.
Amycle, i. 26.
—— amabilis, i. 26, 43.
—— sodalis, i. 26.
Amycle amabilis, i. 26.
—— *sodalis*, i. 26.
ANOTIA, i. 77.
Anotia, i. 79.
—— *bonnetii*, i. 77.
—— invalida, i. 79.
—— marginicornis, i. 77.
—— *marginicornis*, i. 78.
—— pellucida, i. 77.
—— ruficollis, i. 78.
—— smithi, i. 77.
—— *smithi*, i. 78.
—— tenella, i. 78.
—— venustula, i. 78.
ANTIANTHE, ii. 137.
Antianthe, ii. 87, 89, 136, 140.
—— expansa, ii. 137.
—— *expansa*, ii. 138.
—— ——, var. humilis, ii. 138.
—— foliacea, ii. 138.
—— viridissima, ii. 138.
Antonaë, ii. 101.
—— *incrassata*, ii. 102.
APATESON, i. 70.
Apateson, i. 65.
—— albomaculatum, i. 70.
Aphæna guttata, i. 29.
Aphana, i. 28, 29.
APHETEA, ii. 94.
Aphetea, ii. 90.
—— inconspicua, ii. 95.
APHROPHORA, ii. 193.
Aphrophora, ii. 190, 192, 195, 196, 250.
—— *diminuta*, ii. 192.
—— grisea, ii. 194.
—— *grisea*, ii. 195, 196.
—— *inclyta*, ii. 191.
—— lævior, ii. 194.
—— *maura*, ii. 191.
—— *occidentis*, ii. 192.
—— perdubia, ii. 194.
—— *quadrinotata*, ii. 194.
—— 4-*vittata*, ii. 194.
—— *siccifolia*, ii. 192.
Argante, ii. 12, 67.
ASPONA, ii. 50.
Aspona, ii. 49.
—— *bullata*, ii. 50.
—— cuneata, ii. 51.
—— intermedia, ii. 51.
—— turgescens, ii. 50.
ATALANTA, i. 36, 43.
—— ærata, i. 37.
—— auricoma, i. 36, 43.
—— *auricoma*, i. 37.
—— violacea, i. 37.
ATRACIS, i. 147.
Atracis, i. 60.
—— leucophæa, i. 147.
ATYMNA, ii. 140.
Atymna, ii. 89.
—— *carinata*, ii. 141.
—— castaneæ, ii. 140.
AULACIZES, ii. 214.
Aulacizes, ii. 209, 211, 213, 215, 220, 221, 235, 292.
—— affinis, ii. 217.
—— albidipennis, ii. 217.
—— amblardi, ii. 219.
—— *amblardi*, ii. 220.
—— aurantiaca, ii. 218.
—— confusa, ii. 220.
—— *coriacea*, ii. 212.
—— figurata, ii. 216.
—— insignior, ii. 220.
—— invidenda, ii. 216.
—— isabellina, ii. 217.
—— *maculata*, ii. 217.
—— *multiguttata*, ii. 212.

Aulacizes mutans, ii. 215.
—— *nitidipennis*, ii. 210.
—— panamensis, ii. 219.
—— piperata, ii. 215.
—— *piperata*, ii. 216, 218.
—— pollinosa, ii. 218.
—— *rubriventris*, ii. 209.
—— *rufiventris*, ii. 218.
—— sparsa, ii. 218.
—— *stellaris*, ii. 209.
—— *terminalis*, ii. 217.
—— thunbergi, ii. 219.
Aulacotropis prasina, ii. 80.
Azinia, ii. 21.
—— *pallidipennis*, ii. 21.

BASCARRHINUS, ii. 214.
—— platypoides, ii. 214.
Bidis, i. 131, 137.
BILIMEKIA, ii. 127.
Bilimekia, ii. 88, 128.
—— minor, ii. 12
—— styliformis, ii. 127.
BLADINA, i. 69.
Bladina, i. 65.
—— *fuscana*, i. 69.
—— magnifrons, i. 69.
Bocydium, ii. 163.
—— *ancora*, ii. 163.
—— *proximum*, ii. 97.
BOLBONOTA, ii. 15.
Bolbonota, ii. 2, 4, 8, 13, 16, 20.
—— *aurosericea*, ii. 16.
—— corrugata, ii. 19.
—— *corrugata*, ii. 20.
—— ——, var. minor, ii. 19.
—— cuneata, ii. 17.
—— *globosa*, ii. 17.
—— inæqualis, ii. 20.
—— inconspicua, ii. 18.
—— insignis, ii. 17.
—— *insignis*, ii. 19.
—— *nisus*, ii. 18.
—— pictipennis, ii. 18.
—— *pictipennis*, ii. 19.
—— ——, var. lævior, ii. 18.
—— ——, var. *lævior*, ii. 19.
—— *pusio*, ii. 20.
—— *sallæi*, ii. 13.
BOLBONOTODES, ii. 20.
Bolbonotodes, ii. 4.
—— ganglbaueri, ii. 20.
BOOCERUS, ii. 149.
Boocerus, ii. 147.
—— gilvipes, i. 149.
BOTHRIOCERA, i. 82.
Bothriocera, i. 80, 84.
—— albidipennis, i. 84.
—— excelsa, i. 83.
—— nigra, i. 84.
—— pellucida, i. 83.
—— signoreti, i. 82.
—— tinealis, i. 82.
—— *tinealis*, i. 83.
—— venosa, i. 83.
—— *westwoodi*, i. 82.
BOTHRIOCERODES, i. 84.
Bothriocerodes, i. 80, 85, 86.
—— castaneus, i. 85.
—— metallicus, i. 85.
—— variegatus, i. 85.
BRACHYBELUS, ii. 155.
Brachybelus, ii. 146, 153.
—— cruralis, ii. 155.
Brixia, i. 86.
Bubalopa, ii. 73.

CALYPTOPROCTUS, i. 36.
Calyptoproctus, i. 35.
—— elegans, i. 36.
—— guttipes, i. 36.
CALYRIA, i. 18.
—— cuna, i. 19.
—— occidentis, i. 19.
—— *virginea*, i. 19.
Campylenchia, ii. 8, 12.
CAMPYLOCENTRUS, ii. 149.
Campylocentrus, ii. 147, 151, 152, 153, 154.
—— brevicornis, ii. 151.
—— brunneus, ii. 151.
—— gibbicornis, ii. 150.
—— hamifer, ii. 149.
—— *hamifer*, ii. 150, 151, 154.
—— obscuripennis, ii. 150.
—— pusillus, ii. 150.
—— vitreipennis, ii. 150.
CARINETA, i. 19, 144.
—— æstiva, i. 20.
—— *ancilla*, i. 21.
—— cinara, i. 20.
—— indecora, i. 21.
—— lugubrina, i. 21.
—— marginella, i. 21.
—— postica, i. 144.
—— *rufescens*, i. 19.
—— trivittata, i. 20.
—— verna, i. 20.
—— viridicata, i. 19.
Carthæa, i. 51.
Carynota, ii. 136.
Carystus, ii. 198.
CATORTHORRHINUS, ii. 213.
—— resimus, ii. 213.
CEDUSA, i. 112.
Cedusa, i. 103.
—— funesta, i. 112.
—— venosa, i. 112.
CENTRICULUS, ii. 157.
Centriculus, ii. 146, 158.
—— rufotestaceus, ii. 157.
CENTROGONIA, ii. 107.
Centrogonia, ii. 87.
—— elegans, ii. 107.
CENTROTINÆ, ii. 146.
Centrotinæ, ii. 3.
Centrotus, ii. 166, 320.
—— *biclavatus*, ii. 31.
—— *carinatus*, ii. 169.
—— *curvidens*, ii. 149, 154.
—— *fuscipennis*, ii. 162.
—— *gibbicornis*, ii. 150.
—— *hamifer*, ii. 149, 150.
—— *niveiplaga*, ii. 149.
—— *opponens*, ii. 166.
—— *pusillus*, ii. 150.
—— *spinosus*, ii. 35.
—— *subspinosus*, ii. 149, 154.
—— *vitulus*, ii. 102.
CENTRUCHOIDES, ii. 161.
Centruchoides, ii. 147.
—— laticornis, ii. 162.
Centruchus, ii. 161.
—— *fuscipennis*, ii. 162.
Cephaloxys occidentis, i. 19.
CEPHISUS, ii. 192.
Cephisus, ii. 190.
—— siccifolius, ii. 192.
Ceratopola, ii. 85.
Cercopida, ii. 174.
CERCOPIDÆ, ii. 174, 322.
Cercopides, ii. 174.
CERCOPINÆ, ii. 174.
Cercopis, ii. 174, 175, 191.
—— *bicincta*, ii. 183, 184.
—— *cruentata*, ii. 183.
—— *glauca*, ii. 303.
—— *inca*, ii. 176.
—— *lateralis*, ii. 241.
—— *marginella*, ii. 241.
—— *obtusa*, ii. 202.
—— *rubra*, ii. 183, 185.
—— *sororia*, ii. 183, 185.
CERESA, ii. 102.
Ceresa, ii. 50, 77, 78, 79, 80, 87, 96, 97, 101, 103, 106, 107, 108, 110.
—— *alta*, ii. 106.
—— *axillaris*, ii. 104.
—— *bifasciata*, ii. 104.

Ceresa brunnicornis, ii. 105.
—— *bubalus*, ii. 102.
—— *cavicornis*, ii. 106, 107.
—— *chlorotica*, ii. 109.
—— *ciliata*, ii. 107.
—— concinna, ii. 106.
—— *concinna*, ii. 107.
—— *constans*, ii. 106.
—— *curvilinea*, ii. 102.
—— *excisa*, ii. 102.
—— *fastidiosa*, ii. 106.
—— *femorata*, ii. 108.
—— *mexicana*, ii. 103.
—— *nasuta*, ii. 107.
—— nigricornis, ii. 104.
—— nigrovittata, ii. 104.
—— nitens, ii. 320.
—— *patruelis*, ii. 105, 106.
—— puncticeps, ii. 107.
—— *rufescens*, ii. 105.
—— sallæi, ii. 103.
—— *spinifera*, ii. 102.
—— *stålii*, ii. 105.
—— *taurina*, ii. 106.
—— testacea, ii. 105.
—— *testacea*, ii. 103, 106, 107.
—— uncicornis, ii. 104.
—— *uncicornis*, ii. 105.
—— *unguicularis*, ii. 107.
—— *uniformis*, ii. 107, 109.
—— vacca, ii. 106.
—— variabilis, ii. 105.
—— ——, var. intermedia, ii. 105.
—— vitulus, ii. 102.
—— *vitulus*, ii. 103, 104, 105.
—— ——, var. minor, ii. 103.
—— ——, var. *minor*, ii. 105, 107.
Chanithus, i. 39.
CICADA, i. 6, 42.
Cicada, i. 7, 10, 13, 15, 140; ii. 170.
—— *alacris*, i. 7, 9, 10.
—— *albida*, i. 12.
—— *albipennis*, ii. 208.
—— *atrata*, i. 31.
—— *aurea*, ii. 225.
—— bicosta, i. 7.
—— *bicosta*, i. 8.
—— *blanda*, i. 19.
—— *braure*, i. 17.
—— *brizo*, i. 17.
—— *carinata*, ii. 130.
—— *compacta*, i. 16.
—— *consonans*, i. 15.
—— crucifera, i. 9.
—— *cuna*, i. 19.
—— *dexithea*, i. 141.
—— dissimilis, i. 10.
Cicada foliata, ii. 5.
—— *fraxini*, i. 8.
—— *fulvoviridis*, i. 141.
—— *gigas*, i. 14.
—— *grisea*, i. 140.
—— *hieroglyphica*, i. 11.
—— hilaris, i. 9.
—— *hilaris*, i. 10.
—— *indecora*, i. 21.
—— intermedia, i. 10.
—— *invaria*, i. 141.
—— *johannis*, i. 11.
—— *lacrines*, i. 17.
—— *mannifera*, i. 16.
—— *marginella*, i. 21.
—— *melina*, i. 17.
—— *melisa*, i. 17.
—— montezuma, i. 8.
—— nigriventris, i. 9.
—— *obtusa*, ii. 228.
—— oleacea, i. 42.
—— opercularis, i. 7.
—— *orbona*, ii. 231, 232.
—— ornea, i. 7.
—— *ovatipennis*, i. 141.
—— pallida, i. 8.
—— *pallida*, i. 42.
—— *panyases*, i. 17.
—— *passer*, i. 17.
—— *perspicillata*, i. 31.
—— *phalænoides*, i. 50.
—— *physcoa*, i. 17.
—— *pidytes*, i. 17.
—— *plebeia*, i. 16.
—— *pronoe*, i. 16.
—— psophis, i. 9.
—— *pulverea*, i. 12.
—— *reticulata*, ii. 171.
—— robusta, i. 10.
—— *robusta*, i. 13.
—— *rubra*, ii. 183.
—— rudis, i. 8.
—— *sanguinolenta*, ii. 262.
—— *semilata*, i. 17.
—— *sexguttata*, i. 11; ii. 261.
—— *signifera*, i. 13.
—— *solemnis*, i. 17.
—— *sonans*, i. 14.
—— *spinicosta*, i. 17.
—— *tibicen*, i. 7, 8.
—— transversa, i. 7.
—— *transversa*, i. 9.
—— *triupsilon*, i. 14.
—— *undata*, ii. 231.
Cicadariæ, i. 1.
CICADIDÆ, i. 1, 42, 140.
CICADINÆ, i. 140.
Ciccus centrolineatus, ii. 223.
—— *lucicola*, ii. 223.
—— *maculatus*, ii. 217.
—— *nigrilux*, ii. 223.
—— *ochraceus*, ii. 218.
Cixia, i. 96.
CIXIIDÆ, i. 80.
CIXIUS, i. 96.
Cixius, i. 80, 81, 82, 86, 88, 89, 92 98, 101, 102.
—— apicatus, i. 97.
—— comptus, i. 96.
—— flavo-brunneus, i. 97.
—— montanus, i. 96.
—— *montanus*, i. 97.
—— *nervosus*, i. 96.
Cladodiptera, i. 38.
—— *scriptiventris*, i. 41.
—— *viridifrons*, i. 42.
Cladonota, ii. 27, 29, 30.
Cladoptera, i. 38.
Cladopteryx, i. 38.
Cladoxerus, i. 38.
CLADYPHA, i. 38, 44.
—— bugabensis, i. 44.
—— interlita, i. 39.
—— *interlita*, i. 44.
—— rufivena, i. 44.
CLASTOPTERA, ii. 198.
Clastoptera, ii. 190, 191, 203.
—— *achatina*, ii. 202.
—— *annulipes*, ii. 200.
—— antica, ii. 201.
—— *arkansasensis*, ii. 205.
—— bimaculata, ii. 322.
—— chiriquensis, ii. 204.
—— compta, ii. 200.
—— dimidiata, ii. 202.
—— flavifrons, ii. 205.
—— flavivitta, ii. 202.
—— funesta, ii. 199.
—— *funesta*, ii. 200, 204.
—— globosa, ii. 200.
—— *globulus*, ii. 200.
—— irrorata, ii. 206.
—— lænata, ii. 203.
—— *lænata*, ii. 202, 204.
—— *lineata*, ii. 203.
—— *lineatocollis*, ii. 203.
—— minima, ii. 201.
—— *nigrifrons*, ii. 200.
—— obtusa, ii. 202.
—— *obtusa*, ii. 203.
—— *orbiculata*, ii. 203.
—— *pallidiceps*, ii. 199.
—— *proteus*, ii. 199.
—— rufescens, ii. 205.

Clastoptera scutellata, ii. 199.
—— semivitrea, ii. 201.
—— ståli, ii. 204.
—— *testacea*, ii. 205.
—— *thoracica*, ii. 200.
—— *tibialis*, ii. 199.
—— *triangulum*, ii. 204.
—— unicolor, ii. 205.
—— *xanthocephala*, ii. 205.
Clavia, ii. 197.
Clepsydrius, ii. 95.
Clepsydrius, ii. 87.
—— constrictus, ii. 95.
Coanaco, i. 28.
—— guttata, i. 29.
—— *guttata*, i. 28.
—— ornanda, i. 29.
Cobax, i. 74.
Collina, i. 142.
Collina, i. 143.
—— biolleyi, i. 142.
—— *biolleyi*, i. 143.
—— *medea*, i. 142.
Colobesthes, i. 51.
Colpoptera, i. 129.
Colpoptera, i. 114.
—— *marginalis*, i. 129.
—— sinuata, i. 129.
Combophora, ii. 320.
—— besckii, ii. 320.
—— *clavata*, ii. 96.
—— *proxima*, ii. 97.
—— *vulnerans*, ii. 320.
Copicerus, i. 130.
Copicerus, i. 45, 137.
—— irroratus, i. 130.
Corixa, ii. 241.
Cromma, i. 51.
Cryptoptera, ii. 55.
—— *acutula*, ii. 60.
—— *brevis*, ii. 60.
—— *olivacea*, ii. 60.
Cyarda, i. 129.
Cyclumna, i. 116.
Cyclumna, i. 113.
—— subrotundata, i. 116.
Cymbomorpha, ii. 80.
Cymbomorpha, ii. 50.
—— *campestris*, ii. 80.
—— prasina, ii. 80.
—— *vaginata*, ii. 80.
Cyphonia, ii. 96.
Cyphonia, ii. 87, 97, 98, 163.
—— clavata, ii. 96.
—— *hirta*, ii. 98.
—— proxima, ii. 97.
—— *rectispina*, ii. 99.
Cyrpoptus, i. 35.
Cyrpoptus, i. 25, 26.
—— *amabilis*, i. 26.
—— *sodalis*, i. 26.
—— suavis, i. 35.
Cyrtodisca, ii. 226.
—— major, ii. 226.
—— *major*, ii. 227.
Cyrtolobus, ii. 140.
Cyrtolobus, ii. 89, 142.
—— cristifer, ii. 140.
—— discoidalis, ii. 141.
—— distinguendus, ii. 141.
—— inæqualis, ii. 142.
—— virescens, ii. 141.
—— vittatipennis, ii. 142.
Cyrtosia, ii. 89, 140.
—— *carinata*, ii. 141.
—— *cristifera*, ii. 140.
—— *discoidalis*, ii. 141.

Darninæ, ii. 48.
Darninæ, ii. 3.
Darnis, ii. 51.
Darnis, ii. 49, 57, 60, 81.
—— *acutula*, ii. 60.
—— *adusta*, ii. 55.
—— *affinis*, ii. 55.
—— *arcuata*, ii. 86.
—— *bipunctata*, ii. 55.
—— *brevis*, ii. 60.
—— *camelus*, ii. 73.
—— *convoluta*, ii. 53, 54.
—— *dispar*, ii. 90.
—— *elegantula*, ii. 86.
—— *flaviceps*, ii. 53.
—— *glabrata*, ii. 86.
—— *incerta*, ii. 58.
—— *indeterminata*, ii. 59.
—— *interrupta*, ii. 90.
—— lateralis, ii. 52.
—— *lateralis*, ii. 53.
—— latior, ii. 52.
—— *limacodes*, ii. 53.
—— *limbata*, ii. 53.
—— *lineola*, ii. 86, 112.
—— *olivacea*, ii. 60.
—— partita, ii. 52.
—— *prasina*, ii. 60.
—— *reticulata*, ii. 90.
—— *strigifrons*, ii. 55.
—— *transversalis*, ii. 55.
Darnoides, ii. 81.
Darnoides, ii. 50, 82.
—— affinis, ii. 82.
—— *brunnea*, ii. 81, 82.
Darnoides flavescens, ii. 320.
—— *limbata*, ii. 81.
—— *nigroapica*, ii. 82.
Dascalia, i. 59.
Dascalia, i. 50.
—— nietoi, i. 59.
De Kogel-Draagster, ii. 96.
Delphacidæ, i. 130.
Delphax bohemani, i. 86.
Derbe, i. 71.
Derbe, i. 72.
—— *costata*, i. 72.
—— *lunulata*, i. 86.
—— *natalicola*, i. 86.
—— *semistriata*, i. 71.
—— *squamigera*, i. 72.
—— *strigipennis*, i. 71.
—— westwoodi, i. 71.
Derbidæ, i. 70.
Diacira, i. 38.
Diareusa, i. 25.
—— annularis, i. 25.
Diceroprocta, i. 7.
Dichoptera herbida, i. 40.
Dictyophara, i. 39.
Dictyophara, i. 44, 45, 81.
—— brachyrhina, i. 40.
—— chlorochroma, i. 39.
—— curviceps, i. 40.
—— ferocula, i. 40.
—— florens, i. 41.
—— herbida, i. 40.
—— nodivena, i. 40.
—— obtusifrons, i. 40.
—— orbiculata, i. 41.
—— scriptiventris, i. 41.
—— *truncata*, i. 40.
—— tumidifrons, i. 41.
—— vitrata, i. 41.
—— *vitrata*, i. 42.
Dictyopharida, i. 38.
Dictyopharina, i. 38.
Dictyopharinæ, i. 38, 43.
Dictyopharoides, i. 44.
—— tenuirostris, i. 44.
Dictyophora brachyrhina, i. 40.
—— *chlorochroma*, i. 39.
—— *compressifrons*, i. 39.
—— *dioxys*, i. 40.
—— *inexacta*, i. 40.
—— *nodivena*, i. 40.
—— *obtusifrons*, i. 40.
—— *truncata*, i. 40.
—— *tumidifrons*, i. 41.
Diestostemma, ii. 207.
Diestostemma, ii. 292.
—— albipenne, ii. 208.

Diestostemma nigropunctatum, ii. 208.
—— rugicolle, ii. 208.
—— *terminale*, ii. 217.
Dilobopterus, ii. 235.
—— *burmeisteri*, ii. 235.
Domitia, i. 32.
Domitia, i. 33.
—— *basistella*, i. 32.
—— *flavo-punctata*, i. 32.
—— (?) miscella, i. 33.
—— neotropicalis, i. 32.
—— *neotropicalis*, i. 33.
—— obscura, i. 33.
Dorachosa, i. 43.
—— explicata, i. 43.
Dyctiophora, i. 39.
Dyctiophoroides, i. 38.
Dysyncritus, ii. 80.
Dysyncritus, ii. 50.
—— intectus, ii. 81.

Eicissus, ii. 198.
Eicissus, ii. 191.
—— decipiens, ii. 198.
Elidiptera, i. 60, 106, 108.
—— *atrilinea*, i. 63.
—— *basistigma*, i. 60, 61.
—— *obliqua*, i. 64.
Enchenopa, ii. 8.
Enchenopa, ii. 3, 12, 13, 21.
—— *albidorsum*, ii. 8.
—— *antonina*, ii. 12.
—— apicalis, ii. 12.
—— *bifusifera*, ii. 9.
—— *bimaculata*, ii. 12.
—— binotata, ii. 9.
—— *binotata*, ii. 10.
—— *curvata*, ii. 12.
—— *curvicornis*, ii. 11, 12.
—— *densa*, ii. 12.
—— *excelsior*, ii. 11.
—— *frigida*, ii. 12.
—— gladius, ii. 11.
—— *humilior*, ii. 11.
—— ignidorsum, ii. 10.
—— lanceolata, ii. 9.
—— *melaleuca*, ii. 7.
—— minans, ii. 9.
—— *minans*, ii. 10.
—— *monoceros*, ii. 10.
—— multicarinata, ii. 11.
—— (Campylenchia) nutans, ii. 12.
—— quadricolor, ii. 11.
—— *quadricolor*, ii. 12.
—— rugosa, ii. 10.
—— sericea, ii. 10.
Enchenopa sericea, ii. 11.
—— *subangulata*, ii. 11.
—— tesselata, ii. 318.
—— *venosa*, ii. 12.
Enchophora, i. 26.
Enchophora, i. 25, 27, 28.
—— florens, i. 28.
—— *guttata*, i. 29.
—— *longirostris*, i. 28.
—— rosacea, i. 27.
—— sanguinea, i. 27.
—— *sanguinea*, i. 28.
—— stillifer, i. 27.
—— subviridis, i. 28.
Enchophyllum, ii. 7.
Enchophyllum, ii. 3, 8.
—— albidum, ii. 7.
—— *cruentatum*, ii. 7.
—— dubium, ii. 8.
—— *lanceolatum*, ii. 8, 9.
—— melaleucum, ii. 7.
—— *rileyi*, ii. 8.
—— trimaculatum, ii. 8.
Enchotype, ii. 41, 45, 46, 47, 48.
—— *fairmairei*, ii. 48.
Endoiastus, ii. 168.
Endoiastus, ii. 148, 167.
—— caviceps, ii. 168.
Ennya, ii. 133.
—— *chrysura*, ii. 133.
Entaphius, ii. 319.
—— funebris, ii. 319.
Entilia, ii. 129.
Entylia, ii. 129.
Entylia, ii. 84, 88, 90, 130, 131, 132.
—— *accisa*, ii. 130.
—— *bactriana*, ii. 130.
—— *carinata*, ii. 130.
—— *concava*, ii. 129, 131.
—— *concisa*, ii. 130.
—— *corniculata*, ii. 131.
—— *decisa*, ii. 130.
—— *dispar*, ii. 90.
—— gemmata, ii. 131.
—— *impedita*, ii. 130.
—— *inæqualis*, ii. 130.
—— *incisa*, ii. 131.
—— *indecisa*, ii. 130.
—— *mira*, ii. 130, 131, 321.
—— mœsta, ii. 321.
—— œdipus, ii. 321.
—— *reducta*, ii. 130.
—— sinuata, ii. 130.
—— *sinuata*, ii. 321.
Eparmene, i. 101.
Eparmene, i. 81.
—— pulchella, i. 101.
Eparmene pulchella, i. 102.
Epibidis, i. 131.
Epibidis, i. 130.
—— brunnea, i. 132.
—— godmani, i. 131.
Epiclines, ii. 293.
—— godmani, ii. 293.
Epicranion, ii. 197.
Epicranion, ii. 190.
—— championi, ii. 197.
Epipyrops anomala, i. 27.
Episcius (?) *amabilis*, i. 26.
Erecthia, ii. 8.
Eualthe, ii. 73, 78.
Eulixes sallei, i. 115.
Eupelix, ii. 170.
Euritea, ii. 113.
Euritea, ii. 87, 112.
—— munda, ii. 113.
—— *nigripes*, ii. 113.
—— personata, ii. 113.
Eurymela, ii. 170.

Falcidius, i. 119.
Fidicina, i. 16, 42.
Fidicina, i. 17.
—— amœna, i. 42.
—— cachla, i. 42.
—— *determinata*, i. 16.
—— fumea, i. 17.
—— *lacrines*, i. 18.
—— *maculipennis*, i. 2.
—— mannifera, i. 16.
—— *oleacea*, i. 42.
—— *opalina*, i. 18.
—— *pertinax*, i. 17.
—— picea, i. 16.
—— *plebeia*, i. 16.
—— pronoe, i. 16.
—— *rudis*, i. 8.
—— semilata, i. 17.
—— spinicosta, i. 17.
—— *vinula*, i. 16.
Flata, i. 51.
Flata, i. 50, 54, 59, 146.
—— *annularis*, i. 25.
—— championi, i. 51.
—— conspersa, i. 54.
—— corrupta, i. 53.
—— monticola, i. 53.
—— perpusilla, i. 53.
—— *phalænoides*, i. 50.
—— *planiceps*, i. 102.
—— punctata, i. 52.
—— *punctata*, i. 146.
—— regularis, i. 53.

Flata reticulata, i. 66.
—— rotundior, i. 52.
—— *rotundior*, i. 146.
—— rufocinctata, i. 52.
—— *vitrata*, i. 41.
FLATIDÆ, i. 45, 146.
FLATINÆ, i. 50.
Flatinæ, i. 45.
FLATOIDES, i. 60.
Flatoides, i. 50, 59.
—— atrilinea, i. 63.
—— basistigma, i. 61.
—— griseus, i. 63.
—— humeralis, i. 60.
—— *humeralis*, i. 62.
—— isabellinus, i. 63.
—— lævior, i. 61.
—— obliquus, i. 64.
—— pollutus, i. 62.
—— quadripunctulus, i. 61.
—— *rudis*, i. 69.
—— scaber, i. 61.
—— simillimus, i. 62.
—— *simillimus*, i. 63.
Fulgora, i. 22, 25, 26.
—— *amabilis*, i. 26.
—— *annularis*, i. 25.
—— *armata*, i. 24.
—— *candelaria*, i. 27.
—— *castresii*, i. 23.
—— *diadema*, i. 24.
—— *elegans*, i. 36.
—— *lampetis*, i. 23.
—— *perspicillata*, i. 31.
—— *serrata*, i. 43.
—— *servillii*, i. 23.
Fulgorellæ, i. 21.
Fulgorida, i. 21, 22.
FULGORIDÆ, i. 21, 43, 144.
Fulgorides, i. 22.
Fulgorina, i. 21, 22.
FULGORINÆ, i. 22, 43.

GÆANINÆ, i. 140.
GÆTULIA, i. 68.
Gætulia, i. 65.
—— fulva, i. 69.
—— plenipennis, i. 68.
—— *plenipennis*, i. 69.
—— ——, var. nigrocarinata, i. 68.
—— *pudibunda*, i. 68.
Gargara, ii. 167.
—— *discoidalis*, ii. 141.
GARGAROPSIS, ii. 167.
Gargaropsis, ii. 148, 322.
—— innervis, ii. 167.
GERRIDIUS, ii. 165.
Gerridius, ii. 148.
—— abbreviatus, ii. 320.
—— scutellatus, ii. 166.
GLISCHROCENTRUS, ii. 161.
Glischrocentrus, ii. 146.
—— cucullatus, ii. 161.
GNAMPTOCENTRUS, ii. 151.
Gnamptocentrus, ii. 147, 153.
—— cavipennis, ii. 153.
—— sinuatus, ii. 152.
—— *sinuatus*, ii. 153.
GODINGIA, ii. 139.
Godingia, ii. 89.
—— guerreroensis, ii. 139.
GONIOLCIUM, i. 132.
Goniolcium, i. 130.
—— granulosum, i. 132.
—— testaceum, i. 133.
GRYNIA, i. 103.
—— nigricoxis, i. 104.
GYPONA, ii. 294.
Gypona, ii. 293, 307, 316.
—— abjecta, ii. 309.
—— *abjecta*, ii. 296.
—— adspersa, ii. 307.
—— *adspersa*, ii. 295.
—— adusta, ii. 308.
—— *adusta*, ii. 295.
—— alborорata, ii. 306.
—— *alborорata*, ii. 295.
—— atitlana, ii. 305.
—— *atitlana*, ii. 295.
—— bimaculata, ii. 297.
—— *bimaculata*, ii. 295.
—— bisignata, ii. 313.
—— *bisignata*, ii. 296.
—— bohemani, ii. 314.
—— *bohemani*, ii. 296.
—— celata, ii. 316.
—— *celata*, ii. 296.
—— chiriquensis, ii. 298.
—— *chiriquensis*, ii. 295.
—— compta, ii. 301.
—— *compta*, ii. 295.
—— conspersa, ii. 307.
—— *conspersa*, ii. 295.
—— decorata, ii. 311.
—— *decorata*, ii. 296.
—— delicata, ii. 297.
—— *delicata*, ii. 295.
—— *divisa*, ii. 316.
—— dohrni, ii. 310.
—— *dohrni*, ii. 296.
—— dorsalis, ii. 301.
—— *dorsalis*, ii. 295.
—— dubia, ii. 298
Gypona dubia, ii. 295.
—— excelsa, ii. 299.
—— *excelsa*, ii. 295.
—— exornata, ii. 315.
—— *exornata*, ii. 296.
—— extranea, ii. 314.
—— *extranea*, ii. 296.
—— *fervens*, ii. 299, 300.
—— fraudulenta, ii. 308.
—— *fraudulenta*, ii. 295.
—— *funebris*, ii. 304.
—— fuscinervis, ii. 302.
—— *fuscinervis*, ii. 295.
—— germari, ii. 296.
—— *germari*, ii. 295, 297.
—— glauca, ii. 303.
—— *glauca*, ii. 295.
—— hebes, ii. 310.
—— *hebes*, ii. 296.
—— hieroglyphica, ii. 312.
—— *hieroglyphica*, ii. 296, 313.
—— jansoni, ii. 306.
—— *jansoni*, ii. 295.
—— lacteipennis, ii. 299.
—— *lacteipennis*, ii. 295.
—— marginifrons, ii. 302.
—— *marginifrons*, ii. 295.
—— marmorata, ii. 306.
—— *marmorata*, ii. 295, 307.
—— *mexicana*, ii. 302.
—— miliaris, ii. 305.
—— *miliaris*, ii. 295.
—— mystica, ii. 308.
—— *mystica*, ii. 295.
—— nana, ii. 315.
—— *nana*, ii. 296.
—— notanda, ii. 304.
—— *notanda*, ii. 295, 311.
—— notula, ii. 313.
—— *notula*, ii. 296.
—— *obesa*, ii. 303.
—— obscurior, ii. 300.
—— *obscurior*, ii. 295.
—— *ornatula*, ii. 316.
—— *pallescens*, ii. 316.
—— pallidovirens, ii. 298.
—— *pallidovirens*, ii. 295.
—— postica, ii. 303.
—— *postica*, ii. 295.
—— præterita, ii. 314.
—— *præterita*, ii. 296.
—— propior, ii. 311.
—— *propior*, ii. 296.
—— proscripta, ii. 309.
—— *proscripta*, ii. 296, 312.
—— punctipennis, ii. 310.
—— *punctipennis*, ii. 296.

Gypona puniceiventris, ii. 300.
—— *puniceiventris*, ii. 295, 301.
—— reservanda, ii. 313.
—— *reservanda*, ii. 296.
—— resima, ii. 316.
—— *resima*, ii. 296.
—— *ruficauda*, ii. 299.
—— *schaumi*, ii. 300, 304.
—— scutellata, ii. 308.
—— *scutellata*, ii. 295.
—— signoreti, ii. 299.
—— *signoreti*, ii. 295, 300.
—— spreta, ii. 304.
—— *spreta*, ii. 295.
—— subtacta, ii. 304.
—— *subtacta*, ii. 295.
—— teapensis, ii. 307.
—— *teapensis*, ii. 295.
—— tergata, ii. 312.
—— *tergata*, ii. 296.
—— unicolor, ii. 297.
—— *unicolor*, ii. 295.
—— verticalis, ii. 302.
—— *verticalis*, ii. 295.
—— vilior, ii. 301.
—— *vilior*, ii. 295.
—— vinula, ii. 311.
—— *vinula*, ii. 296, 312.
—— ——, var. ornata, ii. 311.
—— *viridescens*, ii. 303.
—— vulnerata, ii. 303.
—— *vulnerata*, ii. 295.
—— wallengreni, ii. 315.
—— *wallengreni*, ii. 296.
GYPONIDÆ, ii. 293.

HAPLAXIUS, i. 97.
Haplaxius, i. 80.
—— frontalis, i. 98.
—— lævis, i. 98.
Hebetica, ii. 52, 53, 54.
HEBETICOIDES, ii. 52.
Hebeticoides, ii. 49, 60.
—— acutus, ii. 53.
—— confusus, ii. 54.
—— denticulatus, ii. 54.
HELICOPTERA, i. 106.
Helicoptera, i. 103, 107, 108, 137.
—— chiriquensis, i. 107.
—— longiceps, i. 107.
—— sobrina, i. 106.
—— *sobrina*, i. 110, 111.
—— ——, var. albido-variegata, i. 107.
Heliria, ii. 143, 144.
—— *cristata*, ii. 144.
Hemiptycha, ii. 43, 72, 73, 78.
—— *apriformis*, ii. 74.
—— *asphaltina*, ii. 74.
—— *camelus*, ii. 73, 74.
—— *cucullata*, ii. 137.
—— *cuneata*, ii. 73.
—— *expansa*, ii. 137.
—— *globiceps*, ii. 73.
—— *nigro-rufa*, ii. 43.
—— *placida*, ii. 79.
—— *pubescens*, ii. 74.
—— *punctum*, ii. 76.
—— *sagata*, ii. 73.
—— *viridissima*, ii. 74.
Hemisciera, i. 16.
Heniconotus, ii. 83.
Heteronota braccata, ii. 98.
—— *hirta*, ii. 98.
HETERONOTUS, ii. 83.
Heteronotus, ii. 50.
—— quadrinodosus, ii. 83.
—— *quadrinodosus*, ii. 84.
—— *quinquenodosus*, ii. 83.
—— trinodosus, ii. 84.
—— *trinodosus*, ii. 83.
—— vulnerans, ii. 320.
HILLE, ii. 143.
Hille, ii. 89, 132, 133.
—— pacifica, ii. 143.
Holiola gibbula, ii. 91.
Holotus, i. 130.
—— *thoracicus*, i. 130.
HOPLOPHORA, ii. 38.
Hoplophora, ii. 32, 41, 47.
—— cinerea, ii. 39.
—— *cinerea*, ii. 40.
—— ——, var. obfuscata, ii. 40.
—— concinna, ii. 41.
—— *corrosa*, ii. 44.
—— disparipes, ii. 40.
—— *disparipes*, ii. 41.
—— *fairmairei*, ii. 46.
—— *granadensis*, ii. 45, 46.
—— *histrionica*, ii. 43.
—— *humilis*, ii. 43.
—— monogramma, ii. 38.
—— *monogramma*, ii. 40.
—— *ornata*, ii. 42.
—— *punctum*, ii. 44.
—— *reclinata*, ii. 34.
—— *sanguinosa*, ii. 38, 39.
—— signoreti, ii. 39.
—— *spinosa*, ii. 35.
—— *tuberculata*, ii. 42.
HOPLOPHORINÆ, ii. 31.
Hoplophorinæ, ii. 3.
HORIOLA, ii. 86.
Horiola, ii. 83, 84, 94, 116, 119.
—— arcuata, ii. 86.
—— *biguttata*, ii. 83, 91.
—— *discalis*, ii. 86, 118.
—— *gibbula*, ii. 83.
—— *glabrata*, ii. 86.
—— *lineolata*, ii. 86.
—— *picta*, ii. 86.
Hotinus, i. 25.
Hyalesthes, i. 92.
Hygris, ii. 50, 92.
Hygyops, i. 131.
Hynnis, i. 74.
—— *rosea*, i. 74.
HYPÆPA, i. 33, 43.
—— *costata*, i. 33, 34.
—— diversa, i. 43.
—— illuminata, i. 34.
—— rubricata, i. 34.
—— *rufifascia*, i. 34.
—— zapotensis, i. 34.
HYPAMASTRIS, ii. 92.
Hypamastris, ii. 81, 86, 88, 90, 95.
—— albifrons, ii. 93.
—— brunnea, ii. 94.
—— minor, ii. 93.
—— segmentata, ii. 93.
—— *segmentata*, ii. 94.
—— variegata, ii. 94.
HYPHANCYLUS, i. 117.
Hyphancylus, i. 114.
—— excelsus, i. 117.
—— falcatus, i. 117.
—— *falcatus*, i. 118, 129.
HYPHINOË, ii. 73.
Hyphinoë, ii. 49, 77, 78, 319.
—— asphaltina, ii. 74.
—— *asphaltina*, ii. 77.
—— bigutta, ii. 78.
—— camelus, ii. 73.
—— *camelus*, ii. 74.
—— cornuta, ii. 76.
—— *cornuta*, ii. 77, 78, 319.
—— cuneata, ii. 73.
—— *cuneata*, ii. 78.
—— *fairmairei*, ii. 75.
—— marginalis, ii. 75.
—— *marginata*, ii. 75.
—— *morio*, ii. 74.
—— ochracea, ii. 78.
—— *placida*, ii. 79.
—— proclivis, ii. 319.
—— purulensis, ii. 77.
—— *purulensis*, ii. 78.
—— subfusca, ii. 319.
—— tau, ii. 76.
—— ——, var. atitlana, ii. 76.

Hyphinoë tau, var. *atitlana*, ii. 319.
—— thoracata, ii. 319.
—— *viridissima*, ii. 74.
—— vulpecula, ii. 77.
Hypsauchenia, ii. 27.
—— *ballista*, ii. 27.
HYPSOPRORA, ii. 25.
Hypsoprora, ii. 4, 23, 26.
—— anatina, ii. 26.
—— coronata, ii. 26.
—— nigerrima, ii. 25.
—— trituberculata, ii. 25.
HYSTEROPTERUM, i. 119.
Hysteropterum, i. 113.
—— angulare, i. 120.
—— montanum, i. 120.
—— *montanum*, i. 119.
—— sierræ, i. 119.

Ianthe, ii. 34, 136.
ICTARANTHE, ii. 79.
Ictaranthe, ii. 49.
—— latifrons, ii. 79.
ISCHNOCENTRUS, ii. 155.
Ischnocentrus, ii. 146, 156, 157.
—— *ferruginosus*, ii. 155.
—— niger, ii. 155.
—— *niger*, ii. 320.
ISSIDÆ, i. 113.
Issus, i. 69, 113.
—— *cassidiformis*, i. 114.
—— *cassidoides*, i. 114.
—— *clypeatus*, i. 114.
—— *convivus*, i. 114.
—— *marmoreus*, i. 114.
—— *ovatipennis*, i. 128.
—— *scutatus*, i. 116.
—— *scutellatus*, i. 123.
ITZALANA, i. 146.
—— formosa, i. 146.

Janthe, ii. 89, 137.
—— *expansa*, ii. 137.
—— *foliacea*, ii. 138.
Jassida, ii. 1.
Jerala, i. 130, 137.
—— *singula*, i. 130.

Kelisia, i. 133.

La Cigale à Ailes de Gaze, i. 66.
La Cigale armée, ii. 35.
La Cigale du citronnier, ii. 171.
La Cigale Phalénoïde, i. 50.
La Cigale Porte-boulet, ii. 96.
La Cigale Rouge à bandes jaunes, ii. 183.
Lamproptera, ii. 165.
LATERNARIA, i. 22.
Laternaria, i. 23.
—— castresii, i. 23.
—— *castresii*, i. 22.
—— lampetis, i. 23.
—— *lampetis*, i. 22.
—— *lucifera*, i. 22.
—— *phosphorea*, i. 22.
—— servillei, i. 23.
—— *servillei*, i. 22.
Lecythifera, ii. 27.
—— *inflata*, ii. 27.
Ledra, ii. 293.
LEIOSCYTA, ii. 14.
Leioscyta, ii. 4.
—— cornutula, ii. 14.
—— nitida, ii. 14.
—— pallidipennis, ii. 14.
Leptocentrus canescens, ii. 321.
Leptosticta, ii. 52, 53, 60.
—— *flaviceps*, ii. 53.
LEPYRONIA, ii. 192.
Lepyronia, ii. 190, 193.
—— sordida, ii. 192.
—— *subfasciata*, ii. 192.
LIBURNIA, i. 133.
Liburnia, i. 130.
—— albolineosa, i. 135.
—— apicimacula, i. 136.
—— atrior, i. 134.
—— basifuscata, i. 134.
—— marginicornis, i. 135.
—— paludata, i. 137.
—— sagata, i. 136.
—— *sagata*, i. 137.
—— *scotti*, i. 136.
—— teapæ, i. 135.
Lobocladisca, ii. 27, 29.
Lophopelta, ii. 41.
—— *histrionica*, ii. 43.
—— *tuberculata*, ii. 42.
Lucilla, ii. 132.
—— *viridula*, ii. 132.
LYCODERES, ii. 164.
Lycoderes, i. 81 ; ii. 148.
—— *luctans*, ii. 165.
—— phasianus, ii. 164.
—— serraticornis, ii. 165.
Lystra auricoma, i. 37.
—— *bombycida*, i. 37.
—— *luctuosa*, i. 31.
—— *reticularis*, i. 37.
—— *reticulata*, ii. 171.
—— *perspicillata*, i. 31.

Macropsis, ii. 317, 322.
Megamelus, i. 133.
MEMBRACIDÆ, ii. 1, 318.
Membracides, ii. 1.
MEMBRACINÆ, ii. 3.
MEMBRACIS, ii. 4.
Membracis, ii. 2, 3, 7, 8, 12, 15, 16, 318.
—— albo-limbata, ii. 5.
—— *apicalis*, ii. 12.
—— *armata*, ii. 35.
—— *binotata*, ii. 9.
—— *bulbifera*, ii. 96.
—— *c-album*, ii. 5.
—— *clavata*, ii. 96.
—— *concava*, ii. 131.
—— *coronata*, ii. 26.
—— (Phyllotropis) dorsata, ii. 318.
—— *elevata*, ii. 6.
—— *foliacea*, ii. 5.
—— foliata, ii. 5.
—— *fulica*, ii. 8.
—— *gemmata*, ii. 131.
—— *gladius*, ii. 11.
—— humilis, ii. 6.
—— *humilis*, ii. 318.
—— *intermedia*, ii. 7.
—— *lanceolata*, ii. 9.
—— lefebvrei, ii. 5.
—— *lunata*, ii. 5.
—— mexicana, ii. 5.
—— *mexicana*, ii. 6, 318.
—— *minans*, ii. 9.
—— nebulosa, ii. 318.
—— *nutans*, ii. 12.
—— *obtegens*, ii. 92.
—— *pœcila*, ii. 12, 13.
—— *sellata*, ii. 10.
—— *sexmaculata*, ii. 5, 6.
—— *sinuata*, ii. 130.
—— *spinosa*, ii. 35.
—— *stolida*, ii. 5, 6.
—— tectigera, ii. 6.
—— *torva*, ii. 13.
—— *trimaculata*, ii. 8.
METABRIXIA, i. 86.
Metabrixia, i. 80.
—— aspersa, i. 87.
—— delicata, i. 86.
—— germana, i. 87.
—— maculata, i. 88.
—— tacta, i. 88.
METHEISA, ii. 132.
Metheisa, ii. 89.
—— lucillodes, ii. 132.
MICRIXIA, i. 100.
Micrixia, i. 81.

Micrixia costalis, i. 101.
Microledrida, i. 99.
Microledrida, i. 81.
—— asperata, i. 99.
Microsargane, ii. 196.
Microsargane, ii. 190.
—— vittata, ii. 196.
Microschema, ii. 41.
Micrutalis, ii. 116.
Micrutalis, ii. 82, 85, 86, 88, 113, 115, 117, 119, 121.
—— albivitta, ii. 121.
—— balteata, ii. 116.
—— *balteata*, ii. 113.
—— *biguttata*, ii. 120.
—— binaria, ii. 117.
—— *binaria*, ii. 85, 116, 118. 120.
—— ——, var. mutabilis, ii. 117.
—— *bipartita*, ii. 120.
—— discalis, ii. 118.
—— dubia, ii. 119.
—— *flaviceps*, ii. 121.
—— *litterata*, ii. 120.
—— lugubrina, ii. 120.
—— *lugubrina*, ii. 121.
—— ——, var. parallela, ii. 120.
—— ——, var. *parallela*, ii. 121.
—— malleifera, ii. 118.
—— *malleifera*, ii. 121.
—— *mœsta*, ii. 85.
—— nigrolineata, ii. 120.
—— notatipennis, ii. 119.
—— pallens, ii. 118.
—— viridicollis, ii. 118.
Miriza, i. 66.
—— *osmyloides*, i. 66.
—— *sororcula*, i. 66.
Mnemosyne, i. 102.
Mnemosyne, i. 81.
—— *cutana*, i. 102.
—— planiceps, i. 102.
Monecphora, ii. 174, 175, 178, 186.
—— *angusta*, ii. 180.
—— *bifascia*, ii. 180.
—— *inca*, ii. 176.
—— *inferens*, ii. 180.
—— *postica*, ii. 184, 186.
Mura, i. 143.
—— elegantula, i. 143.
Mycterodus, i. 46, 121.
—— *productus*, i. 46.
Mysidia, i. 72.
Mysidia, i. 74, 79.
—— acidalioides, i. 72.
—— albipennis, i. 72.
—— *costalis*, i. 72.
Mysidia costata, i. 72.
—— delicatissima, i. 74.
—— elatior, i. 73.
—— maculicosta, i. 73.
—— nebulosa, i. 73.
—— parviceps, i. 73.
—— (?) spreta, i. 74.

Nassunia, ii. 80.
Nassunia, ii. 50, 81, 107.
—— bispina, ii. 80.
Neænus, ii. 191.
Neænus, ii. 190.
—— varius, ii. 191.
Neæthus, i. 113.
Nersia, i. 39.
—— *curviceps*, i. 40.
—— *florens*, i. 41.
—— *nigro-lineata*, i. 39.
—— *scriptiventris*, i. 41.
—— *vitrata*, i. 42.
Nogodina, i. 66.
Nogodina, i. 64, 68.
—— *pictifrons*, i. 67.
—— reticulata, i. 66.
Notocera, ii. 23.

Obia, i. 29.
—— tenebrosa, i. 29.
Ochrolomia, ii. 56, 57.
—— *incerta*, ii. 58.
—— *tricincta*, ii. 52.
—— *zonifera*, ii. 56.
Ochropepla, ii. 43.
Ochropepla, ii. 31, 45, 173.
—— corrosa, ii. 44.
—— dubia, ii. 45.
—— fuscata, ii. 173.
—— inæqualis, ii. 44.
—— *inæqualis*, ii. 45.
—— pallens, ii. 44.
—— *punctum*, ii. 44.
Ochrostacta, ii. 226.
Odopœa, i. 4.
Odopœa, i. 2, 5.
—— azteca, i. 4.
—— *azteca*, i. 5.
—— *biolleyi*, i. 142.
—— diriangani, i. 5.
—— imbellis, i. 4.
—— medea, i. 5.
—— *medea*, i. 142.
—— montezuma, i. 4.
—— *montezuma*, i. 5.
—— signoreti, i. 5.
Œcleus, i. 88.
Œcleus, i. 80, 96.
—— addendus, i. 91.
—— brunneus, i. 91.
—— concinnus, i. 91.
—— decens, i. 90.
—— minimus, i. 90.
—— pellucens, i. 90.
—— *pellucens*, i. 91.
—— seminiger, i. 89.
—— teapæ, i. 89.
—— tenellus, i. 89.
Oliarus, i. 92.
Oliarus, i. 80, 88, 89, 95, 96, 102, 133.
—— breviceps, i. 94.
—— chiriquensis, i. 94.
—— concinnulus, i. 92.
—— *concinnulus*, i. 93, 94.
—— excelsus, i. 92.
—— humeralis, i. 94.
—— insignior, i. 95.
—— *insignior*, i. 96.
—— lacteipennis, i. 93.
—— *lunatus*, i. 93.
—— nigro-alutaceus, i. 95.
—— propior, i. 93.
Ollanta, i. 141.
Ollanta, i. 142.
—— mexicana, i. 141.
Ommatidiotus, i. 121.
Oncometopia, ii. 227.
Oncometopia, ii. 215, 226, 228, 234, 292.
—— alpha, ii. 232.
—— anceps, ii. 234.
—— bi-impressa, ii. 233.
—— dispar, ii. 229.
—— flava, ii. 234.
—— fuscipennis, ii. 230.
—— interjecta, ii. 228.
—— miniatipennis, ii. 231.
—— munda, ii. 232.
—— oaxacæ, ii. 234.
—— obtusa, ii. 228.
—— *obtusa*, ii. 229, 230.
—— quadrinotata, ii. 230.
—— rubescens, ii. 233.
—— rubiginosa, ii. 227.
—— *rubiginosa*, ii. 228.
—— rufipennis, ii. 228.
—— speculifera, ii. 233.
—— *speculifera*, ii. 234.
—— tartarea, ii. 229.
—— *tartarea*, ii. 230.
—— undata, ii. 231.
—— *undata*, ii. 232, 233.
Ophicentrus, ii. 156.

Ophicentrus, ii. 148.
—— notandus, ii. 156.
OPHIDERMA, ii. 142.
Ophiderma, ii. 89.
—— mus, ii. 143.
Optilete, ii. 139.
ORMENIS, i. 55, 146.
Ormenis, i. 50, 51, 54, 59, 147.
—— albescens, i. 57.
—— dolabrata, i. 56.
—— *dolabrata*, i. 57, 147.
—— erminia, i. 56.
—— *erminia*, i. 147.
—— fusca, i. 146.
—— griseoalba, i. 57.
—— inferior, i. 58.
—— infuscata, i. 56.
—— *infuscata*, i. 57.
—— leucophæa, i. 56.
—— *leucophæa*, i. 57.
—— nigrolimbata, i. 55.
—— pallescens, i. 58.
—— pallidicosta, i. 58.
—— panamensis, i. 147.
—— pulverulenta, i. 55.
—— squamulosa, i. 57.
—— tortricina, i. 58.
ORNITHISSUS, i. 121.
Ornithissus, i. 114.
—— cockerelli, i. 122.
ORTHOPLOPHORA, ii. 46.
Orthoplophora, ii. 31.
—— salvini, ii. 47.
OTIOCERUS, i. 74.
Otiocerus, i. 76, 79.
—— breviceps, i. 76.
—— *coqueberti*, i. 74.
—— *degeeri*, i. 74.
—— gracilior, i. 76.
—— griseus, i. 75.
—— interruptus, i. 75.
—— montanus, i. 74.
—— (?) rubescens, i. 76.
—— venustus, i. 75.
OXYGONIA, ii. 133.
Oxygonia, ii. 84, 89, 136, 143.
—— *auriflua*, ii. 133.
—— chrysura, ii. 133.
—— *figurata*, ii. 133.
—— *histrio*, ii. 135.
—— *pacifica*, ii. 143.
—— *rufipes*, ii. 133.
—— *zebrina*, ii. 133.
Oxyrhachis, ii. 161.

PACARINA, i. 142.
—— schumanni, i. 142.
Pacarina signifera, i. 142.
PACHYNTHEISA, i. 99.
Pachyntheisa, i. 81.
—— concinna, i. 100.
—— excelsior, i. 100.
PARACROMNA, i. 146.
—— punctata, i. 146.
—— rotundior, i. 146.
PARANTONAË, ii. 101.
Parantonaë, ii. 87, 95.
—— dipteroides, ii. 102.
PARAPHROPHORA, ii. 195.
Paraphrophora, ii. 190.
—— simplex, ii. 195.
PARMULA, ii. 90.
Parmula, ii. 83, 84, 88, 92, 130.
—— *bistrigata*, ii. 90, 91.
—— dispar, ii. 90.
—— distinguenda, ii. 91.
—— *gibbula*, ii. 91.
—— *munda*, ii. 113.
—— prominens, ii. 91.
—— reticulata, ii. 90.
—— *reticulata*, ii. 91.
PATARA, i. 79.
—— *albida*, i. 79.
—— *guttata*, i. 79.
—— marmorata, i. 79.
Perinoia, ii. 197.
Petrusa, i. 55.
PHACUSA, ii. 111.
Phacusa, ii. 88, 112, 113.
—— dubia, ii. 112.
—— *dubia*, ii. 113.
—— flavomarginata, ii. 111.
—— *flavomarginata*, ii. 112.
—— lineola, ii. 112.
—— major, ii. 111.
—— *nigripes*, ii. 113.
—— pallescens, ii. 111.
—— *pallescens*, ii. 112, 114.
—— *personata*, ii. 113.
—— variata, ii. 111.
—— *variata*, ii. 112.
Phalænomorpha, i. 60.
—— *sordida*, i. 60.
PHAULOCENTRUS, ii. 159.
Phaulocentrus, ii. 146, 161.
—— cornutus, ii. 160.
—— pileatus, ii. 159.
—— *pileatus*, ii. 160.
—— proximus, ii. 160.
—— sordidus, ii. 160.
Phenax auricoma, i. 36.
PHERA, ii. 220.
Phera, ii. 215, 225, 226, 227, 228, 234.
Phera aterrima, ii. 224.
—— *aterrima*, ii. 223.
—— atra, ii. 221.
—— atrata, ii. 222.
—— aurea, ii. 225.
—— *aurea*, ii. 234.
—— centrolineata, ii. 223.
—— *centrolineata*, ii. 221, 222, 224.
—— insolita, ii. 222.
—— lacerta, ii. 225.
—— luciola, ii. 223.
—— *major*, ii. 226.
—— nigriceps, ii. 222.
—— nitida, ii. 222.
—— obscurior, ii. 224.
—— obtusifrons, ii. 223.
—— *obtusifrons*, ii. 222.
—— *tartarea*, ii. 229.
—— tiarata, ii. 223.
—— vitripennis, ii. 221.
—— *vitripennis*, ii. 228.
—— wallengreni, ii. 220.
PHERODES, ii. 225.
—— flammeicolor, ii. 226.
PHILÆNUS, ii. 193.
Philænus, ii. 190, 196.
—— fusco-varius, ii. 193.
Philatis, i. 46, 47.
Philia, ii. 21.
PHILYA, ii. 21.
Philya, ii. 4, 22, 23, 25, 26.
—— *bicolor*, ii. 21.
—— dubia, ii. 22.
—— lituus, ii. 21.
—— minor, ii. 22.
—— vitreipennis, ii. 21.
—— *vitreipennis*, ii. 22.
PHRICTUS, i. 23, 43.
Phrictus, i. 25.
—— *annularis*, i. 25.
—— diadema, i. 24.
—— *ocellatus*, i. 24.
—— quinquepartitus, i. 24.
—— serratus, i. 43.
—— *stillifer*, i. 27.
Phyllotropis, ii. 7, 318.
—— *dorsata*, ii. 318.
—— *humilis*, ii. 318.
—— *trifasciata*, ii. 318.
Phyllyphanta, i. 51.
—— *punctata*, i. 52.
Physoplia, ii. 34.
—— *crassicornis*, ii. 34, 36.
—— *intermedia*, ii. 36.
—— *media*, ii. 36.
—— *nigrata*, ii. 34, 36.
PICUMNA, i. 127.

Picumna, i. 114, 116, 128.
—— mexicana, i. 128.
—— ovatipennis, i. 128.
—— varians, i. 128.
—— venosa, i. 128.
PLATYCENTRUS, ii. 148.
Platycentrus, ii. 147.
—— acuticornis, ii. 148.
—— obtusicornis, ii. 149.
PLATYCOTIS, ii. 41.
Platycotis, ii. 31, 38, 43, 47.
—— acutangula, ii. 42.
—— discreta, ii. 42.
—— histrionica, ii. 43.
—— nigro-rufa, ii. 43.
—— tuberculata, ii. 42.
—— *tuberculata*, ii. 43.
PLECTODERES, i. 108.
Plectoderes, i. 84, 103, 110.
—— asper, i. 110.
—— basalis, i. 109.
—— championi, i. 108.
—— *championi*, i. 109.
—— excelsus, i. 109.
—— flavovittatus, i. 109.
—— fuscolineatus, i. 111.
—— lineatocollis, i. 111.
—— montanus, i. 110.
—— notatus, i. 110.
POBLICIA, i. 31, 145.
—— atomaria, i. 32.
—— constellata, i. 32.
—— misella, i. 31.
—— pallidoconspersa, i. 145.
Pœcilloptera, i. 50.
—— *phalænoides*, i. 50.
—— *tortricina*, i. 58.
PŒCILOPTERA, i. 50.
Pœciloptera, i. 51.
—— *conspersa*, i. 54.
—— *glaucescens*, i. 57.
—— phalænoides, i. 50.
—— *pulverulenta*, i. 55.
—— *ricanioides*, i. 69.
—— *viridissima*, i. 48.
Pœkilloptera, i. 50.
Pœocera misella, i. 31.
—— *perspicillata*, i. 31.
Poiocera, i. 38.
—— *atomaria*, i. 32.
—— *constellata*, i. 32.
—— *fastuosa*, i. 31.
—— *guttipes*, i. 36.
—— *imperatoria*, i. 30.
—— *perspicillata*, i. 31.
—— *spectabilis*, i. 36.
—— *tricolor*, i. 32.
POLYGLYPTA, ii. 121.
Polyglypta, ii. 88, 127, 128.
—— aguæ, ii. 126.
—— *aguæ*, ii. 128.
—— *bogotensis*, ii. 122, 123.
—— *brevitta*, ii. 125.
—— costata, ii. 122.
—— *costata*, ii. 123, 321.
—— ——, var. nigridorsis, ii. 123.
—— dispar, ii. 126.
—— *dispar*, ii. 124.
—— dorsalis, ii. 124.
—— *dorsalis*, ii. 123, 125, 127.
—— *flavo-maculata*, ii. 125.
—— *fusca*, ii. 124.
—— godmani, ii. 321.
—— *godmani*, ii. 122, 123.
—— *hordeacea*, ii. 124.
—— *interrupta*, ii. 122.
—— lineata, ii. 125.
—— *lineata*, ii. 126.
—— ——, var. major, ii. 126.
—— maculata, ii. 125.
—— *maculata*, ii. 123, 124.
—— *nigella*, ii. 124.
—— *nigriventris*, ii. 122, 123.
—— *pallipes*, ii. 124.
—— *pilosa*, ii. 122, 123.
—— *reflexa*, ii. 122, 123.
—— *sicula*, ii. 124.
—— *straminea*, ii. 122.
—— *strigata*, ii. 122.
—— *tredecim-costata*, ii. 125, 126.
—— tricolor, ii. 125.
—— *tricolor*, ii. 124.
—— *viridimaculata*, ii. 122.
POLYGLYPTODES, ii. 128.
Polyglyptodes, ii. 87, 88.
—— affinis, ii. 129.
—— cucullatus, ii. 128.
—— scaphiformis, ii. 129.
Pomponia imperatoria, i. 2.
POPPEA, ii. 97.
Poppea, ii. 87, 96, 98, 100.
—— affinis, ii. 100.
—— *affinis*, ii. 101.
—— capricornis, ii. 99.
—— *capricornis*, ii. 100.
—— concinna, ii. 100.
—— munda, ii. 101.
—— *munda*, ii. 100.
—— rectispina, ii. 99.
—— *rectispina*, ii. 100.
—— reticulata, ii. 101.
—— setosa, ii. 97.
—— *setosa*, ii. 98.
—— subrugosa, ii. 99.
Poppea succinea, ii. 320.
—— torva, ii. 98.
POTNIA, ii. 45.
Potnia, ii. 31, 41, 46, 47, 48, 67.
—— *asodalis*, ii. 46.
—— brevicornis, ii. 46.
—— *fairmairei*, ii. 48.
—— granadensis, ii. 45.
—— *granadensis*, ii. 46.
PROARNA, i. 11, 140.
Proarna, i. 141.
—— albida, i. 12.
—— *albida*, i. 141.
—— ——, var. *insignis*, i. 141.
—— championi, i. 12.
—— germari, i. 140.
—— insignis, i. 12, 141.
—— longirostris, i. 13.
—— maura, i. 13.
—— pulverea, i. 12.
—— sallæi, i. 12.
—— *sallæi*, i. 13.
—— signifera, i. 13.
—— *signifera*, i. 142.
Proconia, ii. 227.
—— *admittens*, ii. 221.
—— *atra*, ii. 221.
—— *aurea*, ii. 225.
—— *aurigena*, ii. 221.
—— *badia*, ii. 231, 232.
—— *clarior*, ii. 228.
—— *consistens*, ii. 215.
—— *contraria*, ii. 221.
—— *insolita*, ii. 222.
—— *lucernea*, ii. 231.
—— *major*, ii. 226.
—— *marginata*, ii. 231.
—— *nigricans*, ii. 231.
—— *parallela*, ii. 228.
—— *plagiata*, ii. 231, 232.
—— *rubiginosa*, ii. 227.
—— *scissa*, ii. 226.
—— *scutellata*, ii. 231, 232.
—— *speculifera*, ii. 233.
—— *tenebrosa*, ii. 231.
PROTEINISSUS, i. 121.
Proteinissus, i. 114, 122.
—— bilimeki, i. 121.
Proterpia, ii. 73.
PSEUDHELICOPTERA, i. 107.
Pseudhelicoptera, i. 103.
—— nasuta, i. 108.
Pseudophana, i. 39.
Pseudophanides, i. 38.
PSILOCENTRUS, ii. 156.
Psilocentrus, ii. 147.
—— xautipæ, ii. 157.

PTERODICTYA, i. 37.
—— ephemera, i. 37.
—— *ephemera*, i. 38.
PTERYGIA, ii. 23.
Pterygia, ii. 4, 25.
—— bituberculata, ii. 24.
—— cerviceps, ii. 24.
—— *coronata*, ii. 26.
—— hispida, ii. 24.
—— *trituberculata*, ii. 25.
—— *varia*, ii. 25, 26.
PTYELINÆ, ii. 190.
Ptyelinæ, ii. 174.
Ptyelus, ii. 196.
—— *mutans*, ii. 197.
—— *siccifolius*, ii. 192.
—— *variolosus*, ii. 192.
PUBLILIA, ii. 131.
Publilia, ii. 89, 129, 132.
—— concava, ii. 131.
—— *concava*, ii. 130, 132.
—— porrecta, ii. 131.
—— *porrecta*, ii. 130, 132.
Pyranthe, ii. 73, 79.
—— *flavo-marginata*, ii. 79.
Pyrops annularis, i. 25.
—— *serratus*, i. 43.

Ranatræ, ii. 174.
Raphirhinus, ii. 213.
RHAMPHIXIUS, i. 81.
Rhamphixius, i. 80.
—— championi, i. 81.
Rhaphidorhinus, ii. 213.
Rhaphirhinus, ii. 213, 214.
—— *attenuatus*, ii. 213.
—— *phosphoreus*, ii. 213.
RHOTALA, i. 137.
—— ambigua, i. 138.
—— *delineata*, i. 138.
RICANIA, i. 65.
Ricania, i. 64.
—— bugabensis, i. 65.
—— feralis, i. 65.
—— *klugii*, i. 66.
—— *plenipennis*, i. 68.
—— *reticulata*, i. 66, 67.
RICANIINÆ, i. 64.
Ricaniinæ, i. 45.
RIHANA, i. 140.
—— virgulata, i. 140.
RUDIA, i. 104.
Rudia, i. 103.
—— bicincta, i. 105.
—— *bicincta*, i. 104.
—— diluta, i. 104.
Rudia proxima, i. 104.
—— ——, var. minor, i. 104.
—— verticalis, i. 105.

SASSULA, i. 66.
Sassula, i. 65.
—— costalis, i. 68.
—— *osmyloides*, i. 67.
—— pictifrons, i. 67.
—— *pictifrons*, i. 66, 68.
—— ——, var. ruatanensis, i. 68.
—— *sorurcula*, i. 67.
SCALMOPHORUS, ii. 22.
Scalmophorus, ii. 4.
—— reticulatus, ii. 23.
—— *reticulatus*, ii. 22.
SCAPHULA, ii. 82.
Scaphula, ii. 50, 83.
—— melanocephala, ii. 83.
SCARALIS, i. 36.
—— spectabilis, i. 36.
Scaris, ii. 293, 294.
SELYMBRIA, i. 14.
—— modesta, i. 14.
—— *modesta*, i. 13, 141.
SMERDALEA, ii. 162.
Smerdalea, ii. 147.
—— horrescens, ii. 163.
Smilia, ii. 139, 140.
—— *brunnea*, ii. 82.
—— *carinata*, ii. 141.
—— *castaneæ*, ii. 140.
—— *cristifera*, ii. 140.
—— *foliacea*, ii. 138.
—— *pallens*, ii. 102, 103.
—— *prasina*, ii. 80.
—— *vittatipennis*, ii. 79.
SMILIINÆ, ii. 86.
Smiliinæ, ii. 3.
Smiliorachis, ii. 80.
—— *bispina*, ii. 80.
SPATHOCENTRUS, ii. 153.
Spathocentrus, ii. 146.
—— intermedius, ii. 153.
SPHÆROCENTRUS, ii. 154.
Sphærocentrus, ii. 146.
—— curvidens, ii. 154.
Sphenorhina, ii. 174, 175, 186, 209.
—— *assimilis*, ii. 186, 188.
—— biolleyi, ii. 322.
—— *bivitta*, ii. 189.
—— *conspicua*, ii. 206.
—— *costaricensis*, ii. 206.
—— *cruciata*, ii. 189.
—— *distincta*, ii. 186.
—— *flavicincta*, ii. 184.
Sphenorhina lævicollis, ii. 183.
—— *latifascia*, ii. 183.
—— *lineata*, ii. 189.
—— *lineolata*, ii. 189.
—— *obscura*, ii. 182.
—— *parallela*, ii. 189.
—— perfecta, ii. 322.
—— *plagiata*, ii. 187.
—— *quadriguttata*, ii. 177.
—— quota, ii. 322.
—— *rubra*, ii. 183.
—— *septemnotata*, ii. 187.
—— *similis*, ii. 189.
—— *simplex*, ii. 181.
—— *simulans*, ii. 185.
—— *sororia*, ii. 183, 184.
—— *tricolor*, ii. 184.
—— *trifasciata*, ii. 184.
SPHONGOPHORUS, ii. 26.
Sphongophorus, ii. 3, 21, 27.
—— (Lecythifera) affinis, ii. 29.
—— *affinis*, ii. 30.
—— *apicalis*, ii. 27, 28.
—— ballista, ii. 27.
—— *ballista*, ii. 28, 29.
—— (Lobocladisca) biclavatus, ii. 31.
—— *biclavatus*, ii. 31.
—— (Lecythifera) championi, ii. 28.
—— *championi*, ii. 30.
—— *claviger*, ii. 27, 28.
—— (Lobocladisca) guerini, ii. 31.
—— *guerinii*, ii. 31.
—— inelegans, ii. 318.
—— (Lecythifera) inflatus, ii. 30.
—— (Cladonota) latifrons, ii. 30.
—— (Lecythifera) robustulus, ii. 29.
Stegaspis, ii. 164.
Stenocranus, i. 133.
STICTOCEPHALA, ii. 108.
Stictocephala, ii. 87, 109, 110, 136.
—— cornuta, ii. 110.
—— dubia, ii. 109.
—— *dubia*, ii. 110.
—— ——, var. major, ii. 109.
—— elongata, ii. 110.
—— femorata, ii. 108.
—— fusca, ii. 109.
—— *uniformis*, ii. 107.
STICTOPELTA, ii. 55.
Stictopelta, ii. 49, 56, 57, 58, 59.
—— acutula, ii. 60.
—— *adusta*, ii. 55.
—— affinis, ii. 55.
—— *affinis*, ii. 53.
—— assimilis, ii. 57.
—— bipunctata, ii. 55.

Stictopelta fraterna, ii. 59.
—— hinnuleus, ii. 57.
—— incerta, ii. 58.
—— indeterminata, ii. 59.
—— lineifrons, ii. 58.
—— nigrifrons, ii. 58.
—— punctata, ii. 57.
—— strigifrons, ii. 55.
—— varians, ii. 56.
—— *varians*, ii. 57.
—— zonifera, ii. 56.
Stilbophora, ii. 85.
STRAGANIA, ii. 316.
Stragania, ii. 293, 317, 322.
—— humilis, ii. 317.
—— misella, ii. 317.
Stridulantes, i. 1.
Stridulantia, i. 1.
STYLOCENTRUS, ii. 163.
Stylocentrus, ii. 148.
—— championi, ii. 164.
SYNTAMES, i. 138.
Syntames, i. 137.
—— delicatus, i. 139.
—— ——, var. chiriquensis, i. 139.

TELAMONA, ii. 143.
Telamona, ii. 90, 136, 140.
—— albidorsata, ii. 145.
—— cristata, ii. 144.
—— excelsa, ii. 144.
—— mexicana, ii. 144.
—— salvini, ii. 145.
—— *salvini*, ii. 144.
—— satyrus, ii. 145.
—— sinuata, ii. 144.
—— *spreta*, ii. 144, 145.
—— *tristis*, ii. 144.
Tetigonia, ii. 235, 292.
Tetraplatys atomarius, ii. 18.
TETTIGADES, i. 5.
Tettigades, i. 2, 6.
—— *chilensis*, i. 6.
—— *compacta*, i. 6.
—— mexicana, i. 6.
TETTIGIA, i. 10.
—— hieroglyphica, i. 11.
—— *orni*, i. 11.
—— pennata, i. 11.
TETTIGONIA, ii. 235.
Tettigonia, ii. 207, 215, 217, 226, 243, 292, 294.
—— *acuta*, ii. 273.
—— æqua, ii. 265.
—— *affinis*, ii. 217.
—— alqiceps, ii. 265.
—— *albida*, ii. 253.
Tettigonia albidonotata, ii. 250.
—— *albipennis*, ii. 208.
—— albomaculata, ii. 253.
—— *albomaculata*, ii. 251.
—— *amblardii*, ii. 219.
—— amulæ, ii. 252.
—— anceps, ii. 279.
—— *angulifera*, ii. 273.
—— angustula, ii. 291.
—— *angustula*, ii. 292.
—— ——, var. immaculata, ii. 292.
—— anita, ii. 281.
—— *antica*, ii. 273.
—— aphrophoroides, ii. 250.
—— appropinquans, ii. 247.
—— *appropinquans*, ii. 248.
—— areolata, ii. 261.
—— *atra*, ii. 221.
—— atropunctata, ii. 266.
—— *aurantiaca*, ii. 218.
—— *aurea*, ii. 225.
—— aurolineata, ii. 283.
—— *aurolineata*, ii. 284, 287.
—— *biimpressa*, ii. 233.
—— bilimeki, ii. 263.
—— bilineata, ii. 257.
—— *bimaculata*, ii. 233.
—— blanchardi, ii. 252.
—— *blanchardi*, ii. 264.
—— burmeisteri, ii. 235.
—— cæruleovittata, ii. 277.
—— ——, var. delineata, ii. 277.
—— carissima, ii. 280.
—— *centrolineata*, ii. 223.
—— cervina, ii. 250.
—— chiriquensis, ii. 237.
—— civilis, ii. 272.
—— clepsydra, ii. 270.
—— *clepsydra*, ii. 271.
—— *coagulata*, ii. 221.
—— coccinea, ii. 263.
—— coctilis, ii. 238.
—— collata, ii. 261.
—— completa, ii. 268.
—— composita, ii. 277.
—— *composita*, ii. 278.
—— compta, ii. 271.
—— *compta*, ii. 272, 287.
—— concinnula, ii. 287.
—— *confusa*, ii. 220.
—— congruens, ii. 252.
—— consobrina, ii. 245.
—— conspissata, ii. 241.
—— corixoides, ii. 240.
—— cosmopolita, ii. 266.
—— *costalis*, ii. 241, 242.
—— costaricensis, ii. 259.
Tettigonia costaricensis, ii. 260.
—— *cristata*, ii. 227.
—— cyanescens, ii. 273.
—— cynthia, ii. 236.
—— *cynthia*, ii. 237.
—— *deficiens*, ii. 236.
—— delicata, ii. 269.
—— detracta, ii. 258.
—— diducta, ii. 274.
—— *diducta*, ii. 275.
—— distinguenda, ii. 257.
—— dohrni, ii. 268.
—— dorsisignata, ii. 282.
—— *dorsisignata*, ii. 322.
—— edwardsi, ii. 268.
—— *ephemera*, i. 37.
—— erumpens, ii. 256.
—— *excavata*, ii. 227.
—— feralis, ii. 254.
—— flaccida, ii. 278.
—— *flava*, ii. 234.
—— flavivitta, ii. 271.
—— flavoguttata, ii. 260.
—— fractilinea, ii. 255.
—— *fractilinea*, ii. 256.
—— *funebris*, ii. 230.
—— fuscodorsata, ii. 269.
—— fuscolineella, ii. 290.
—— ——, var. fronteræ, ii. 290.
—— germana, ii. 242.
—— *germana*, ii. 243.
—— granulata, ii. 245.
—— *granulata*, ii. 246.
—— guerreroensis, ii. 246.
—— guttata, ii. 263.
—— *herpes*, ii. 228, 229.
—— hilaris, ii. 267.
—— *ichthyocephala*, ii. 221.
—— idonea, ii. 276.
—— ignobilis, ii. 248.
—— induta, ii. 270.
—— *induta*, ii. 271.
—— infulata, ii. 282.
—— innervis, ii. 274.
—— *innotata*, ii. 273.
—— instrata, ii. 237.
—— *instrata*, ii. 238.
—— *irrorata*, ii. 218.
—— jucunda, ii. 262.
—— larvata, ii. 238.
—— lateralis, ii. 241.
—— *lateralis*, ii. 242.
—— lativittata, ii. 281.
—— laudata, ii. 261.
—— lemniscata, ii. 283.
—— lignea, ii. 239.
—— limbaticollis, ii. 279.

Tettigonia lineata, ii. 277.
—— lineosa, ii. 240.
—— lucasi, ii. 268.
—— *luciola*, ii. 223.
—— luculenta, ii. 284.
—— *lugens*, ii. 241.
—— lugubris, ii. 249.
—— *lugubris*, ii. 252.
—— lunata, ii. 273.
—— lutea, ii. 267.
—— magica, ii. 245.
—— *magica*, ii. 264.
—— *major*, ii. 226.
—— *mannifera*, i. 16.
—— *marginata*, ii. 231.
—— mediolineata, ii. 244.
—— melancholica, ii. 240.
—— mexicana, ii. 264.
—— miniaticeps, ii. 285.
—— *minor*, ii. 273.
—— *minuta*, ii. 171.
—— mollicella, ii. 289.
—— mollicula, ii. 288.
—— *mollicula*, ii. 289.
—— mollipes, ii. 273.
—— *mollipes*, ii. 274.
—— monticola, ii. 244.
—— mosaica, ii. 239.
—— *mosaica*, ii. 240.
—— multicolor, ii. 266.
—— multilineata, ii. 241.
—— *multivirgata*, ii. 239.
—— *mutans*, ii. 215.
—— nasuta, ii. 291.
—— *nasuta*, ii. 292.
—— *nigriceps*, ii. 222.
—— *nigrifascia*, ii. 253.
—— nigroguttata, ii. 267.
—— *nigroguttata*, ii. 268.
—— *nigropunctata*, ii. 208.
—— *nitida*, ii. 222.
—— notanda, ii. 255.
—— notaticeps, ii. 273.
—— *obtecta*, ii. 281.
—— obtusior, ii. 278.
—— *obtusior*, ii. 279.
—— occatoria, ii. 279.
—— orbata, ii. 286.
—— *orbata*, ii. 287.
—— *orbona*, ii. 231.
—— ostrina, ii. 257.
—— *pallida*, ii. 253.
—— pardalina, ii. 238.
—— pectoralis, ii. 285.
—— *picta*, ii. 276.
—— pileata, ii. 287.
—— præstantior, ii. 254.
Tettigonia præterita, ii. 243.
—— *præterita*, ii. 244.
—— *producta*, ii. 273.
—— prolixa, ii. 275.
—— *proxima*, ii. 260.
—— psittacella, ii. 290.
—— pulchella, ii. 260.
—— *pulcherrima*, ii. 231.
—— pumicata, ii. 246.
—— punctulata, ii. 242.
—— *punctulata*, ii. 243, 245.
—— purpurascens, ii. 259.
—— *pyrrhotelus*, ii. 241.
—— *quadriplagiata*, ii. 288.
—— quadrivittata, ii. 276.
—— 14-punctata, ii. 268.
—— quinquesignata, ii. 239.
—— recta, ii. 264.
—— *recta*, ii. 265.
—— redacta, ii. 276.
—— redundans, ii. 251.
—— *reflexa*, ii. 213.
—— reservata, ii. 267.
—— resolubilis, ii. 236.
—— *reticulata*, ii. 171.
—— robustula, ii. 288.
—— rubescens, ii. 282.
—— *rubescens*, ii. 322.
—— *rubiginosa*, ii. 227.
—— rubricollis, ii. 260.
—— *rubriguttata*, ii. 262.
—— *rubriventris*, ii. 209.
—— ruficeps, ii. 235.
—— ——, var. deficiens, ii. 236.
—— ——, var. trilineata, ii. 236.
—— rufimargo, ii. 284.
—— *rufimargo*, ii. 285.
—— ——, var. propior, ii. 284.
—— ——, var. *propior*, ii. 285.
—— *rufipennis*, ii. 228.
—— rufoapicata, ii. 286.
—— rufofasciata, ii. 258.
—— *rugicollis*, ii. 208.
—— *rugosa*, ii. 213.
—— *rutilans*, ii. 246.
—— sagata, ii. 280.
—— *sagata*, ii. 281.
—— salutaris, ii. 281.
—— sanguinolenta, ii. 262.
—— satelles, ii. 288.
—— scutellata, ii. 258.
—— *semiclara*, ii. 239, 240.
—— semirasa, ii. 249.
—— separanda, ii. 249.
—— septemfasciata, ii. 236.
—— sexguttata, ii. 261.
—— *sexguttata*, ii. 262.
Tettigonia sexlineata, ii. 280.
—— sirena, ii. 253.
—— sociata, ii. 262.
—— sororia, ii. 272.
—— spectanda, ii. 285.
—— spectralis, ii. 256.
—— *speculifera*, ii. 233.
—— stâli, ii. 246.
—— *stâli*, ii. 251, 253.
—— ——, var. fractinota, ii. 246.
—— *subflava*, ii. 292.
—— superflua, ii. 248.
—— tæniata, ii. 257.
—— tenera, ii. 289.
—— teres, ii. 287.
—— tessellata, ii. 264.
—— testudinaria, ii. 251.
—— transfuga, ii. 247.
—— tripunctata, ii. 253.
—— trivirgata, ii. 259.
—— tunicata, ii. 271.
—— *tunicata*, ii. 272.
—— typhlocyboides, ii. 291.
—— *undata*, ii. 231.
—— undecim-maculata, ii. 254.
—— uniguttata, ii. 253.
—— *uniguttata*, ii. 247, 254.
—— urbana, ii. 278.
—— *urbana*, ii. 224, 279.
—— variegata, ii. 291.
—— *variegata*, ii. 292.
—— *veliformis*, ii. 276.
—— velutina, ii. 251.
—— venusta, ii. 266.
—— *venusta*, ii. 265.
—— verecunda, ii. 269.
—— ——, var. cuernavacæ, ii. 270.
—— virgaticeps, ii. 275.
—— *vitripennis*, ii. 221.
—— vulnerata, ii. 264.
TETTIGONIIDÆ, ii. 207.
Thelia, ii. 136, 143.
—— *cristata*, ii. 144.
—— *excelsa*, ii. 144.
—— *expansa*, ii. 137.
—— *gladiator*, ii. 47, 48.
—— *obliqua*, ii. 74.
—— *reversa*, ii. 138.
—— *rufivitta*, ii. 109.
—— *tacta*, ii. 108, 136.
—— *viridissima*, ii. 138.
THIONIA, i. 122.
Thionia, i. 114, 125, 126, 127.
—— brevior, i. 123.
—— caviceps, i. 125.
—— conspersa, i. 125.
—— humilis, i. 124.

Thionia maculipes, i. 123.
—— naso, i. 124.
—— pictifrons, i. 125.
—— scutellata, i. 123.
—— *scutellata*, i. 124.
—— soluta, i. 126.
—— *soluta*, i. 127.
—— sordida, i. 124.
—— stipes, i. 127.
—— variegata, i. 122.
Thiscia, i. 46.
Tibicen, i. 18.
Tibicen, i. 43, 142.
—— guatemalenus, i. 18.
—— *hæmatodes*, i. 18.
—— *septemdecim*, i. 2, 18.
Tibiceninæ, i. 142.
Tolania, ii. 166.
Tolania, ii. 148, 159, 170.
—— obtusa, ii. 166.
—— opponens, ii. 166.
—— *opponens*, ii. 167.
Tomaspis, ii. 175, 206.
Tomaspis, ii. 174.
—— *angusta*, ii. 180.
—— apicifasciata, ii. 186.
—— assimilis, ii. 188.
—— *bicincta*, ii. 185.
—— bifascia, ii. 180.
—— conspicua, ii. 206.
—— contigua, ii. 183.
—— costaricensis, ii. 206.
—— discontinua, ii. 179.
—— distincta, ii. 186.
—— *fasciaticollis*, ii. 185.
—— handlirschi, ii. 182.
—— ignobilis, ii. 181.
—— imperans, ii. 188.
—— *imperans*, ii. 175.
—— ——, var. sexnotata, ii. 188.
—— inca, ii. 176.
—— *inca*, ii. 178.
—— *inferens*, ii. 180.
—— insignita, ii. 177.
—— intermedia, ii. 178.
—— jugata, ii. 183.
—— laterinotata, ii. 184.
—— lepidior, ii. 185.
—— limbata, ii. 179.
—— lineata, ii. 189.
—— miles, ii. 182.
—— mylabroides, ii. 178.
—— *mylabroides*, ii. 179.
—— nuptialis, ii. 189.
—— obscura, ii. 181.
—— *ornatipennis*, ii. 189.
—— *pictipennis*, ii. 184, 186.
Tomaspis plagiata, ii. 187.
—— postica, ii. 184.
—— præminiata, ii. 179.
—— *præminiata*, ii. 178.
—— prænitida, ii. 186.
—— quadriguttata, ii. 177.
—— quatuordecim-notata, ii. 177.
—— 14-*notata*, ii. 206.
—— rubra, ii. 183.
—— *rubra*, ii. 184.
—— semimaculata, ii. 176.
—— *semimaculata*, ii. 177.
—— septemnotata, ii. 187.
—— sepulchralis, ii. 181.
—— *similis*, ii. 189.
—— simulans, ii. 185.
—— *simulans*, ii. 186.
—— *sororia*, ii. 184.
—— stygia, ii. 177.
—— turpior, ii. 187.
—— *varians*, ii. 186, 188.
—— vilior, ii. 180.
—— *vilior*, ii. 181.
—— *vittatipennis*, ii. 189.
Tomogonia, ii. 79.
Tomogonia, ii. 49.
—— vittatipennis, ii. 79.
—— *vittatipennis*, ii. 80.
Trachytalis, ii. 115.
Trachytalis, ii. 87, 116.
—— distinguenda, ii. 115.
—— isabellina, ii. 115.
Tragopa, ii. 84.
Tragopa, ii. 50, 82, 85, 86, 90, 92, 119.
—— *aspera*, ii. 50.
—— bugabensis, ii. 85.
—— *ephippium*, ii. 85, 117.
—— *gilviceps*, ii. 85.
—— insignis, ii. 85.
—— *picta*, ii. 86.
—— *prominens*, ii. 91.
Tragopinæ, ii. 84.
Tragopinæ, ii. 3.
Trapezoida hirsuta, ii. 320.
Triecphora, ii. 174, 175.
—— *contigua*, ii. 183.
Triopsis fasciata, i. 86.
Triquetra, ii. 32.
Triquetra, ii. 31, 34.
—— apicalis, ii. 33.
—— grossa, ii. 32.
—— *grossa*, ii. 33.
—— *hebes*, ii. 44.
—— *obscura*, ii. 34.
—— *turrita*, ii. 33, 34.
—— *valida*, ii. 74.
Triquetra veruta, ii. 33.
—— *veruta*, ii. 34.
—— *virescens*, ii. 32, 33.
—— *virgata*, ii. 32, 33.
Tritropidia, ii. 8.
Tropidarnis, ii. 60.
Tropidarnis, ii. 49.
—— acutior, ii. 61.
—— robustus, ii. 319.
—— tectigera, ii. 60.
—— *tectigera*, ii. 319.
Tropidaspis, ii. 169.
Tropidaspis, ii. 148, 167, 168.
—— affinis, ii. 169.
—— *carinata*, ii. 169.
Tropidocera, ii. 7, 8.
—— *lanceolata*, ii. 9.
—— *trimaculata*, ii. 8.
Tropidolamia, ii. 85.
Tropidoscyta, ii. 12.
Tropidoscyta, ii. 4, 8, 13, 14, 15.
—— *arcuata*, ii. 15.
—— *cornutula*, ii. 13, 14.
—— *gibbera*, ii. 13, 15.
—— *pallidipennis*, ii. 13, 14.
—— sallæi, ii. 13.
—— uniformis, ii. 14.
Tropiduchina, i. 103.
Tubercunota, ii. 16, 20.
Tylopelta, ii. 15.
Tylopelta, ii. 4.
—— gibbera, ii. 15.
Tympanoterpes, i. 14, 42.
—— *dexithea*, i. 141.
—— gigas, i. 14.
—— *grisea*, i. 141.
—— *grossa*, i. 15.
—— ruatana, i. 42.
—— *sibilatrix*, i. 15.

Ugyops, i. 131.
Ulixes, i. 114.
Ulixes, i. 113, 115.
—— clypeatus, i. 114.
—— *clypeatus*, i. 116.
—— *convivus*, i. 114.
—— intermedius, i. 115.
—— *marmoreus*, i. 114.
—— scutatus, i. 116.
Umbonia, ii. 34.
Umbonia, ii. 32, 37, 38, 47.
—— *amazili*, ii. 34.
—— *apicalis*, ii. 33.
—— articularia, ii. 319.
—— ataliba, ii. 35.

Umbonia ataliba, ii. 36, 37.
—— *crassicornis*, ii. 36.
—— *curvispina*, ii. 35.
—— *decorata*, ii. 36.
—— ermanni, ii. 319.
—— *funesta*, ii. 34.
—— gladius, ii. 38.
—— *indicator*, ii. 47.
—— *lativitta*, ii. 35.
—— *multiformis*, ii. 34.
—— *nigrata*, ii. 36.
—— *obscura*, ii. 33.
—— orizabæ, ii. 37.
—— *ornata*, ii. 42.
—— orozimbo, ii. 36.
Umbonia orozimbo, ii. 34, 37.
—— *picta*, ii. 36.
—— pyramidalis, ii. 35.
—— reclinata, ii. 34.
—— *reducta*, ii. 35.
—— spinosa, ii. 35.
—— *terribilis*, ii. 32.
—— *turrita*, ii. 33.
Uroxiphus, ii. 159.
—— *caryæ*, ii. 159.

Vanduzea, ii. 140.
Varcia, i. 67.
Vutina, i. 60.

Xenaphrophora, ii. 195.
Xenaphrophora, ii. 190.
—— montana, ii. 196.

Zammara, i. 2.
Zammara, i. 4, 5.
—— *angulosa*, i. 3.
—— *callichroma*, i. 3.
—— calochroma, i. 3.
—— *imbellis*, i. 4.
—— *montezuma*, i. 4.
—— smaragdina, i. 3.
—— *smaragdula*, i. 3.
Zinneca, ii. 293, 316.

PRINTED BY TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.

1, 1a	MEMBRACIS FOLIATA, *var.* C-ALBUM.	9, 9a, b	ENCHOPHYLLUM DUBIUM.	16, 16a	ENCHENOPA QUADRICOLOR
2, 2a	,, ALBO-LIMBATA.	10, 10a, b	ENCHENOPA BINOTATA.	17	,, ,, *var.*
3, 3a	,, LEFEBVREI.	11, 11a	,, MINANS.	18, 18a	,, NUTANS
4, 4a	,, MEXICANA.	12, 12a	,, IGNIDORSUM.	19, 19a	TROPIDOSCYTA SALLÆI.
5, 5a	,, ,, *var.*	13	,, SERICEA.	20, 20a	,, UNIFORMIS
6, 6a	,, HUMILIS.	14, 14a	,, RUGOSA.	21, 21a	LEIOSCYTA PALLIDIPENNIS
7, 7a, b	ENCHOPHYLLUM MELALEUCA.	15	,, GLADIUS.	22, 22a	,, CORNUTULA.
8, 8a	,, ALBIDUM.			23, 23a, b	,, NITIDA.

Edwin Wilson Cambridge.

Black 3/Color White Magenta Red Yellow Green Cyan Blue
Kodak LICENSED PRODUCT © The Tiffen Company, 2000 KODAK Color Control Patches
Centimetres Inches

1,1a	TYLOPELTA	GIBBERA.	8, 8a,b	BOLBONOTODES	GANGLBAUERI.	14,14a	HYPSOPRORA NIGERRIMA.
2,2a	BOLBONOTA	INSIGNIS.	9, 9a,b	PHILYA	MINOR.	15,15a,b	„ TRITUBERCULATA.
3	„	„ ,var.	10,10a,b	„	DUBIA.	16,16a	„ ANATINA.
4,4a,b	„	CUNEATA.	11,11a,b	SCALMOPHORUS	RETICULATUS.	17,17a,b	„ CORONATA.
5,5a	„	INCONSPICUA.	12,12a	PTERYGIA	CERVICEPS.	18,18a,b	SPHONGOPHORUS BALLISTA.
6,6a	„	CORRUGATA.	13,13a	„	BITUBERCULATA.	19,19a,b	„ „
7,7a	„	INÆQUALIS.				20,20a,b	„ „

Edwin Wilson. Cambridge.

KODAK Color Control Patches
© The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters
Inches

Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1*a* SPHONGOPHORUS
2,2*a* ,,
3,3*a* ,,
4,4*a* ,,
5,5*a*-*c* ,,
6,6*a*, ♂ ,,
7,7*a*, ♀ ,,
8,8*a* ,,

CHAMPIONI. 9, 9*a*
AFFINIS. 10,10*a*
ROBUSTULUS. 11,11*a*
BICLAVATUS. 12,12*a*
INFLATUS. 13,13*a*
LATIFRONS. 14,14*a*
,, 15,15*a* ♀
GUERINI. 16,16*a* ♂
,, 17,17*a* ♀

TRIGUETRA VERUTA. 18 ♀
,, GROSSA. 19,19*a* ♂
,, APICALIS. 20,20*a* ♂
UMBONIA RECLINATA. 21,21*a* ♂
,, GLADIUS. 22 ♀
,, ATALIBA. 23,23*a*
,, OROZIMBO. 24,24*a*
,, ,, 25,25*a*
,, ,, ,*var*
,, ,, ,*var*
,, ,, ,*var*

UMBONIA OROZIMBO, *var*
,, ,*var*
,, ,*var*
OWIZARA.
,,
HOPLOPHORA SIGNORETTI
,, CINEREA
,, DISPARIPES

Edwin Wilson Cambridge

Biologia Centrali-Americana. Vol. II Plate 3.

Rhynchota Homoptera.

1, 1a,b	HOPLOPHORA	CONCINNA.	7, 7a,b	OCHROPEPLA	DUBIA.
2, 2a	PLATYCOTIS	TUBERCULATA.	8, 8a,b	„	INÆQUALIS.
3, 3a,b	„	„ ,*var.*	9, 9a	POTNIA	BREVICORNIS.
4, 4a,b	„	DISCRETA.	10, 10a,b	ORTHOPLOPHORA	SALVINI.
5, 5a	„	HISTRIONICA.	11, 11a	ACONOPHOROIDES	GLADIATOR.
6, 6a,b	OCHROPEPLA	CORROSA.	12, 12a-c	ASPONA	TURGESCENS.
			13, 13a-c	„	INTERMEDIA.
14, 14a,b	ASPONA	CUNEATA.			
15, 15a-c	DARNIS	PARTITA.			
16, 16a-c	„	LATIOR.			
17, 17a-d	HEBETICOIDES	ACUTUS.			
18, 18a,b	„	CONFUSUS.			
19, 19a,b	STICTOPELTA	BIPUNCTATA.			

Edwin Wilson Cambridge.

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1a-c	STICTOPELTA	VARIANS.	9,9a	ACONOPHORA	CALIGINOSA.	16,16a	ACONOPHORA	FERRUGINEA.
2,2a,b	"	PUNCTATA.	10,10a	"	NIGRICORNIS.	17,17a ♂	"	DISPARICORNIS.
3,3a,b	"	LINEIFRONS.	11,11a	"	PINGUIS.	18,18a ♂,19 ♀	"	FUSIFORMIS.
4,4a,b	"	NIGRIFRONS.	12,12a	"	NITIDA.	20,20a ♂,21 ♀	"	SINANJENSIS.
5,5a,b	"	INDETERMINATA	13,13a	"	VARIPENNIS.	22,22a-c	"	FEMORALIS.
6,6a,b	"	ACUTULA.	14,14a	"	ENSATA.	23	"	PALLESCENS.
7,7a-c	TROPIDARNIS	TECTIGERA.	15,15a	"	PRUNITIA.	24,24a,b	ALCMEONE	GODMANI.
8,8a	ACONOPHORA	MEXICANA.				25,25a,b		HYPHINOË MARGINATA.

p. 61

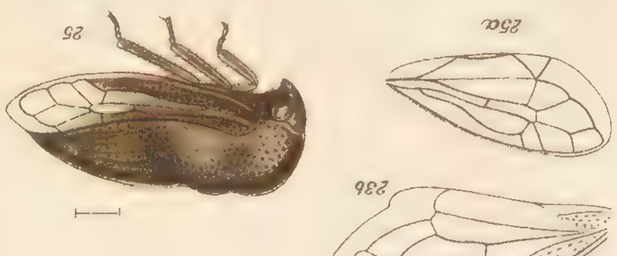
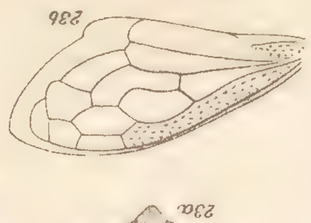
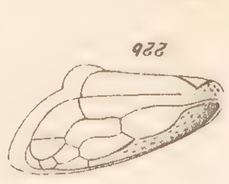
Edwin Wilson Cambridge.

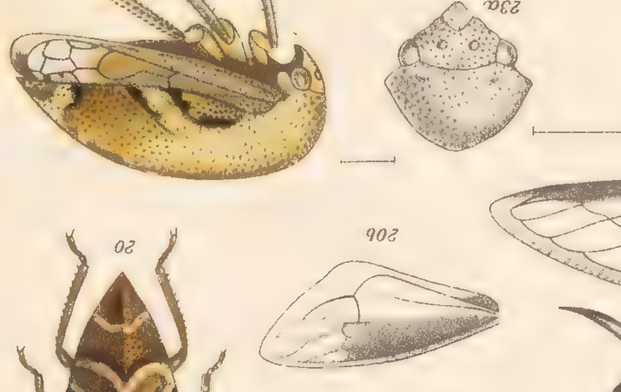
Biol. Centr. Am.

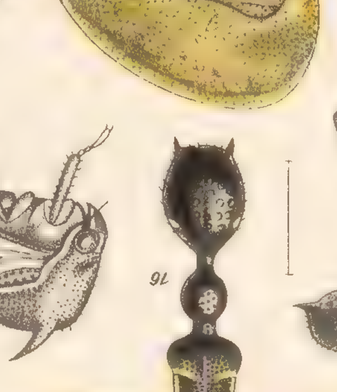
Rhynchota Hemiptera. Vol. II. Tab. 5.

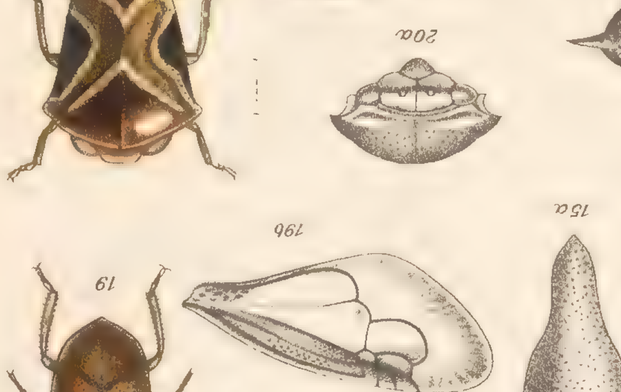
Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

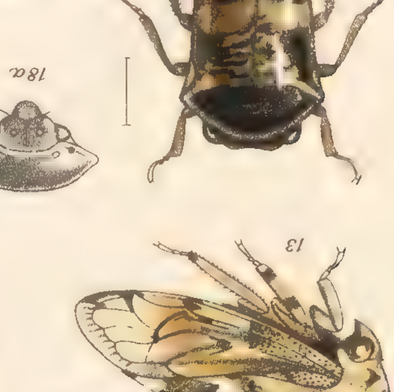
1, 1a,b HYPHINOË TAU. 9, 9a-c♀ ICTARANTHE LATIFRONS. 19, 19a,b TRAGOPA BUGABENSIS.
2, 2a,b " " ,v ATITLANA. 10, 10a TOMOGONIA VITTATIPENNIS. 20, 20a,b HORIOLA ARCUATA.
3, 3a,b " CORNUTA. 11, 11a,b CYMBOMORPHA PRASINA. 21, 21a,b PARMULA DISTINGUENDA.
4, 4a,b♀ " PURULENSIS. 12, 12a,b NASSUNIA BISPINA. 22, 22a,b AMASTRIS OBTEGENS.
5, 5a,b♂ " " 13, 13a,b DYSYNCRITUS INTECTUS. 23, 23a,b HYPAMASTRIS SEGMENTATA.
6, 6a,b " VULPECULA. 14, 14a,b DARNOIDES AFFINIS. 24, 24a " " ALBIFRONS.
7, 7a,b " BIGUTTA. 15, 15a,b SCAPHULA MELANOCEPHALA. 25, 25a,♂ APHETEA INCONSPICUA.
8, 8a " OCHRACEA. 16, 16a,b♂,17♀ HETERONOTUS TRINODOSUS. 26, 26a,♀ " "
18, 18a TRAGOPA INSIGNIS.

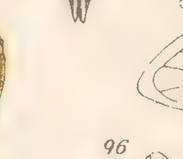




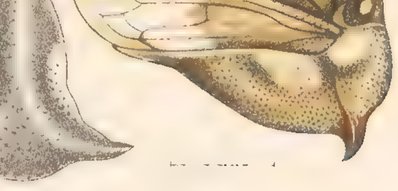


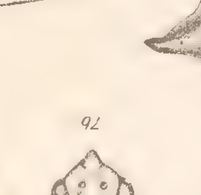
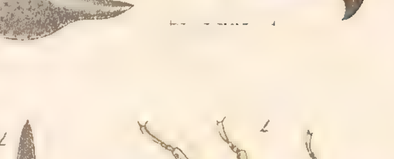


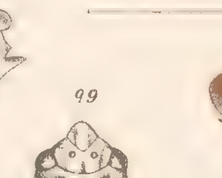
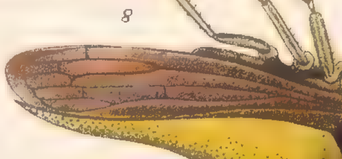


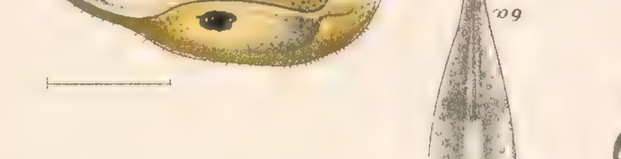








Edwin Wilson Cambridge.

Biol. Centr.-Am. Rhynchota Homoptera. Vol. II Tab. 6

1,1a–c	CLEPSYDRIUS CONSTRICTUS	9, 9a,b	POPPEA MUNDA.					
2,2a	CYPHONIA CLAVATA.	10,10a	PARANTONAE DIPTEROIDES.	19,19a	PHACUSA FLAVOMARGINATA			
3,3a–c	POPPEA SETOSA.	11,11a	CERESA NIGRICORNIS.	20,20a	" MAJOR.			
4,4a,b	" TORVA	12,12a	" NIGROVITTATA.	21,21a	" LINEOLA			
5,5a,b	" SUBRUGOSA.	13,13a	" UNGICORNIS.	22,22a	EURITEA PERSONATA.			
6,6a,b	" CAPRICORNIS.	14,14a	" VACCA.	23,23a	" MUNDA.			
7,7a,b	" CONCINNA.	15,15a	" CONCINNA.	24,24a	ACUTALIS NIGRINERVIS.			
8,8a,b	" AFFINIS.	16,16a	CENTROGONIA ELEGANS.	25,25a	TRACHYTALIS ISABELLINA.			
		17,17a	STICTOCEPHALA FUSCA.					

Edwin Wilson. Cambridge

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1a MICRUTALIS MALLEIFERA. 9, 9a,b BILIMEKIA STYLIFORMIS. 18,18a ADIPPE CONCINNA.
2,2a " VIRIDICOLLIS. 10,10a,b POLYGLYPTODES CUCULATUS. 19,19a " INCONSPICUA.
3,3a " NOTATIPENNIS. 11,11a,b " SCAPHIFORMIS. 20,20a " INÆQUALIS.
4,4a POLYGLYPTA COSTATA, *var.* NIGRIDORSIS. 12,12a,b ENTYLIA SINUATA *var.* MIRA. 21,21a,b ANTIANTHE EXPANSA.
5,5a,b " DORSALIS, *var.* 13,13a METHEISA LUCILLODES. 22,22a ♀ GODINGIA GUERREROENSIS.
6,6a ♂ " DISPAR. 14,14a ADIPPE ZEBRINA. 23,23a ♂ " "
7,7a ♀ " " 15,15a " MACULATA. 24,24a CYRTOLOBUS CRISTIFER.
8,8a " AGUÆ. 16,16a " PARDALINA. 25,25a,b " DISCOIDALIS.
17,17a " HISTRIO.

Edwin Wilson. Cambridge.

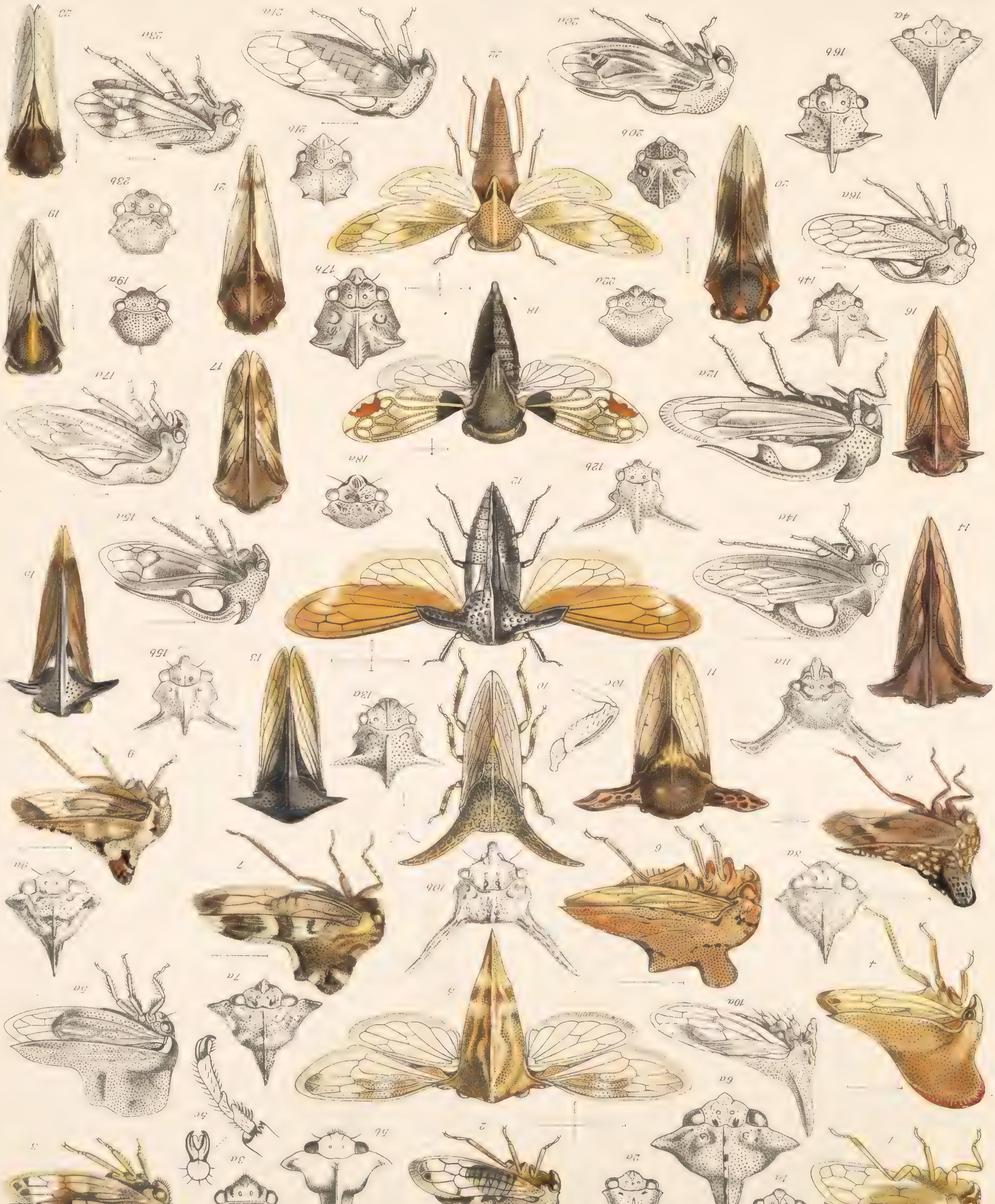
Biol. Centr.-Am. *Rhynchota Hemiptera.* *Vol. II. Tab. 8.*

Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1, 1*a* CYRTOLOBUS VIRESCENS.
2, 2*a* ,, INÆQUALIS.
3, 3*a* OPHIDERMA MUS.
4, 4*a* TELAMONA EXCELSA.
5, 5*a-c* ,, MEXICANA.
6, 6*a* ,, CRISTATA.
7, 7*a* ,, SINUATA.
8, 8*a* ALBIDORSATA.

9, 9*a* TELAMONA SATYRUS.
10, 10*a-c* PLATYCENTRUS ACUTICORNIS.
11, 11*a* ,, OBTUSICORNIS.
12, 12*a*, *b* CAMPYLOCENTRUS OBSCURIPENNIS.
13, 13*a* ,, BREVICORNIS.
14, 14*a*, *b* ,, BRUNNEUS.
15, 15*a*, *b* GNAMPTOCENTRUS CAVIPENNIS.

16, 16*a*, *b* SPATHOCENTRUS INTERMEDIUS.
17, 17*a*, *b* SPHÆROCENTRUS CURVIDENS
18, 18*a* BRACHYBELUS CRURALIS.
19, 19*a* ISCHNOCENTRUS NIGER.
20, 20*a*, *b* OPHICENTRUS NOTANDUS.
21, 21*a*, *b* PSILOCENTRUS XAUTIPÆ.
22, 22*a* CENTRICULUS RUFOTESTACEUS.
23, 23*a*, *b* AMBLYCENTRUS PUBESCENS

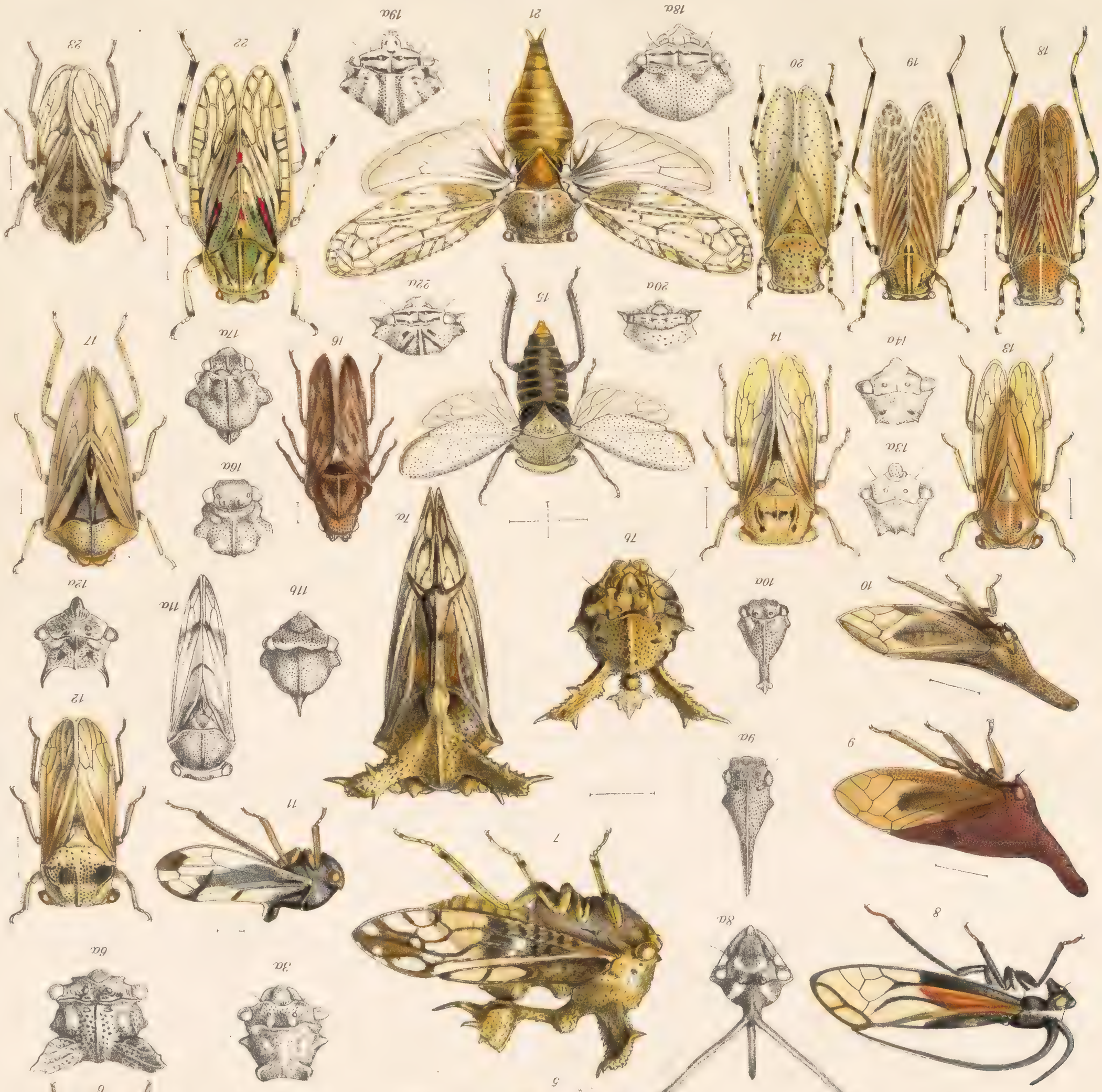


Stal. Centr.-Am. Hemiptera. Vol. II. Tab. 9.

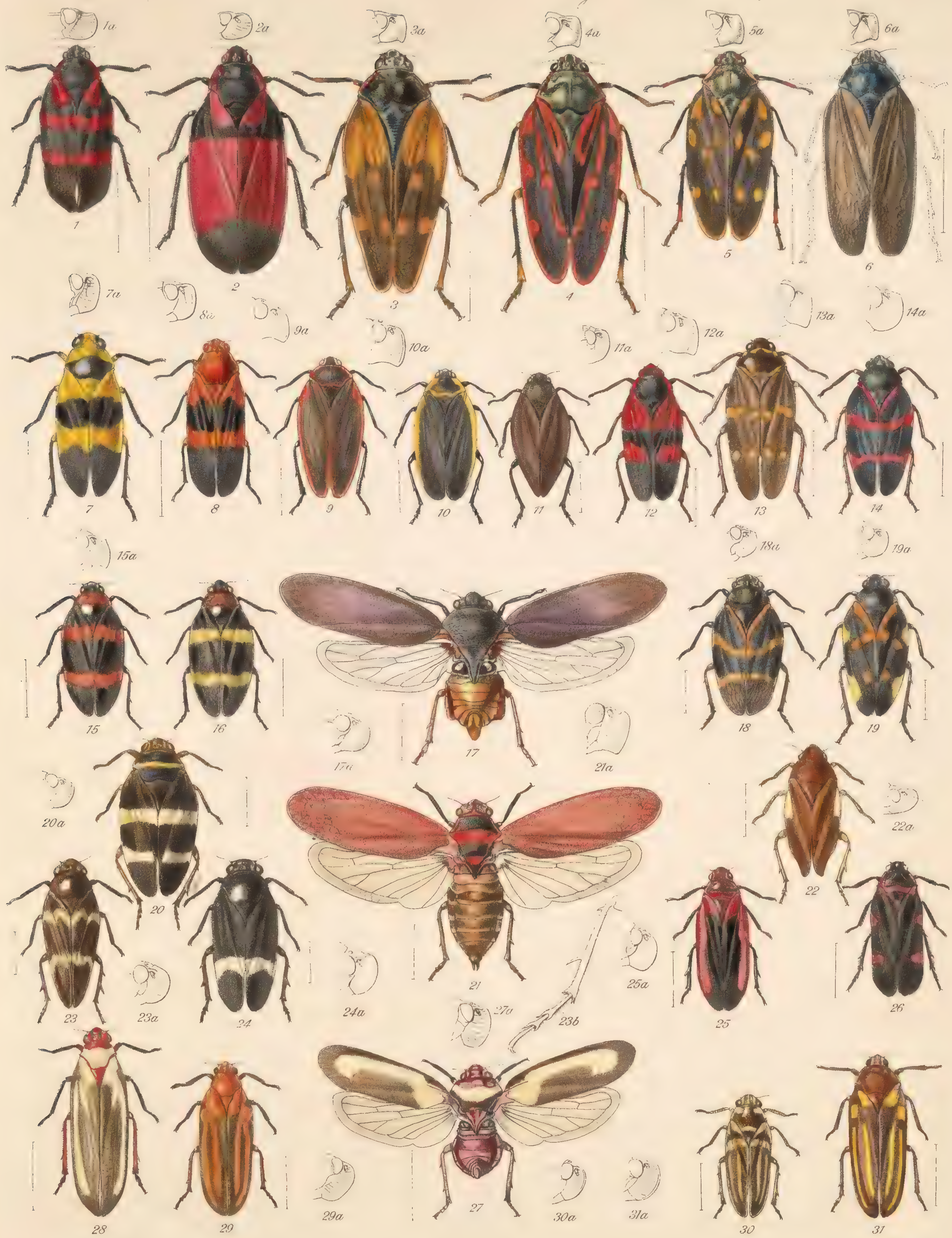
Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1, 1a	PHAULOCENTRUS PILEATUS.	9, 9a	LYCODERES PHASIANUS.	16, 16a	ENDOIASTUS CAVICEPS.		
2, 2a	" PROXIMUS.	10, 10a	" SERRATICORNIS.	17, 17a	TROPIDASPIS AFFINIS.		
3, 3a	" SORDIDUS.	11, 11a, b	GERRIDIUS SCUTELLATUS.	18, 18a	ATHALION RETICULATUM.		
4, 4a	" CORNUTUS.	12, 12a	TOLANIA OPPONENS.	19, 19a	" " VITTICOLLE.		
5, 5a	GLISCHROCENTRUS CUCULLATUS.	13, 13a	" " *var.*	20, 20a	" NERVOSO-PUNCTATUM		
6, 6a	CENTRUCHOIDES LATICORNIS.	14, 14a	" OBTUSA.	21	" " *var.* MINOR		
7, 7a, b	SMERDALEA HORRESCENS.	15	GARGAROPSIS INNERVIS.	22, 22a	" QUADRATUM		
8, 8a	STYLOCENTRUS CHAMPIONI.			23	OCHROPEPLA FUSCATA		

Edwin Wilson. Cambridge.

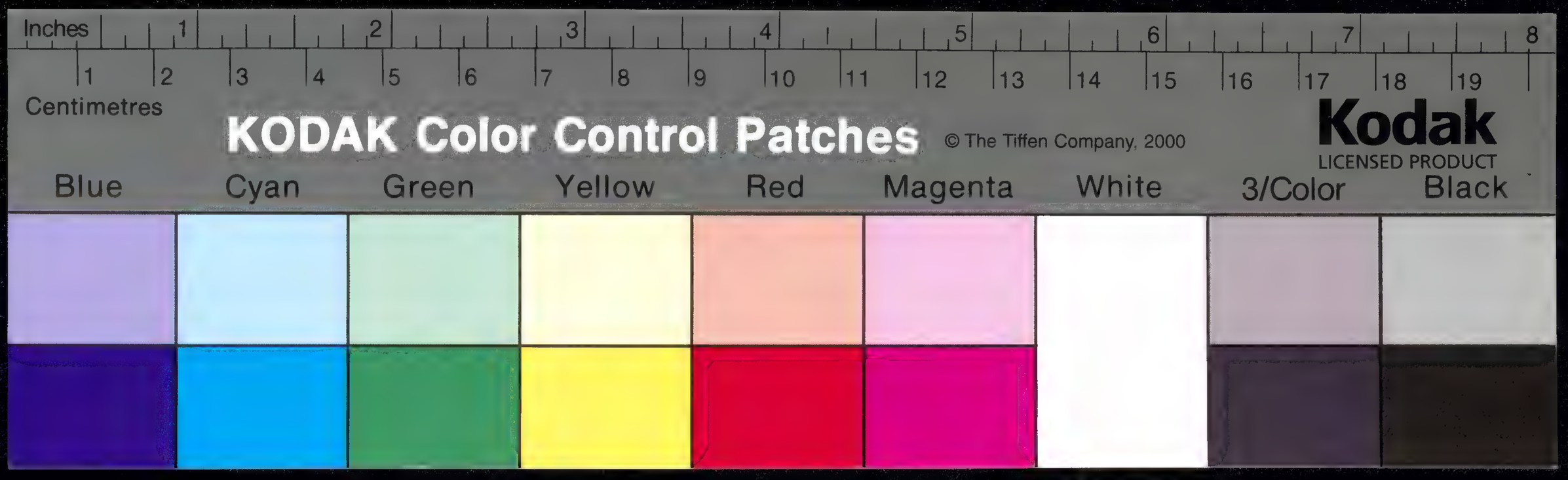


Biol. Centr.-Am. Rhynchota Heteroptera Vol. II Tab. 10.

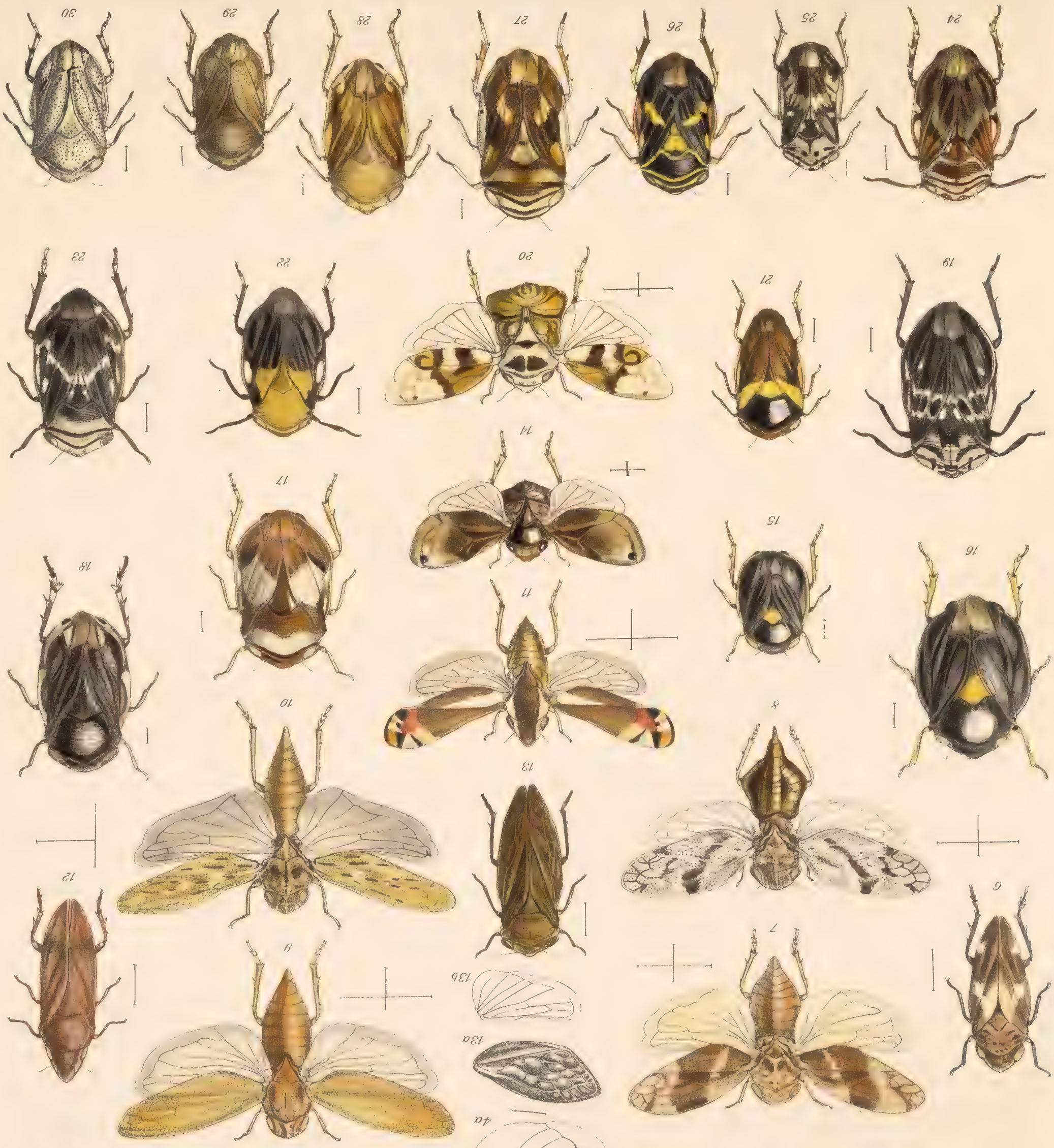


1, 1a	TOMASPIS	INCA.	11, 11a	TOMASPIS	VILIOR.	22, 22a	TOMASPIS LATERINOTATA
2, 2a	"	" ,var.	12, 12a	"	MILES.	23, 23a, b	" PRÆNITIDA
3, 3a	"	SEMIMACULATA.	13, 13a	"	HANDLIRSCHI.	24, 24a	" APICIFASCIATA
4, 4a	"	INSIGNITA.	14, 14a	"	JUGATA.	25, 25a	" IMPERANS.
5, 5a	"	14-NOTATA.	15, 15a	"	RUBRA.	26	" " ,var. 6-NOTATA
6, 6a	"	STYGIA.	16	"	" ,var.	27, 27a	" ASSIMILIS
7, 7a	"	MYLABROIDES.	17, 17a	"	DISTINCTA.	28	" " ,var.
8, 8a	"	PRÆMINIATA	18, 18a	"	POSTICA.	29, 29a	" LINEATA
9, 9a	"	LIMBATA	19, 19a	"	LEPIDIOR.	30, 30a	" " ,var. SIMILIS
10, 10a	"	DISCONTINUA.	20, 20a	"	SIMULANS.	31, 31a	" NUPTIALIS
			21, 21a	"	PLAGIATA.		

Edwin Wilson, Cambridge



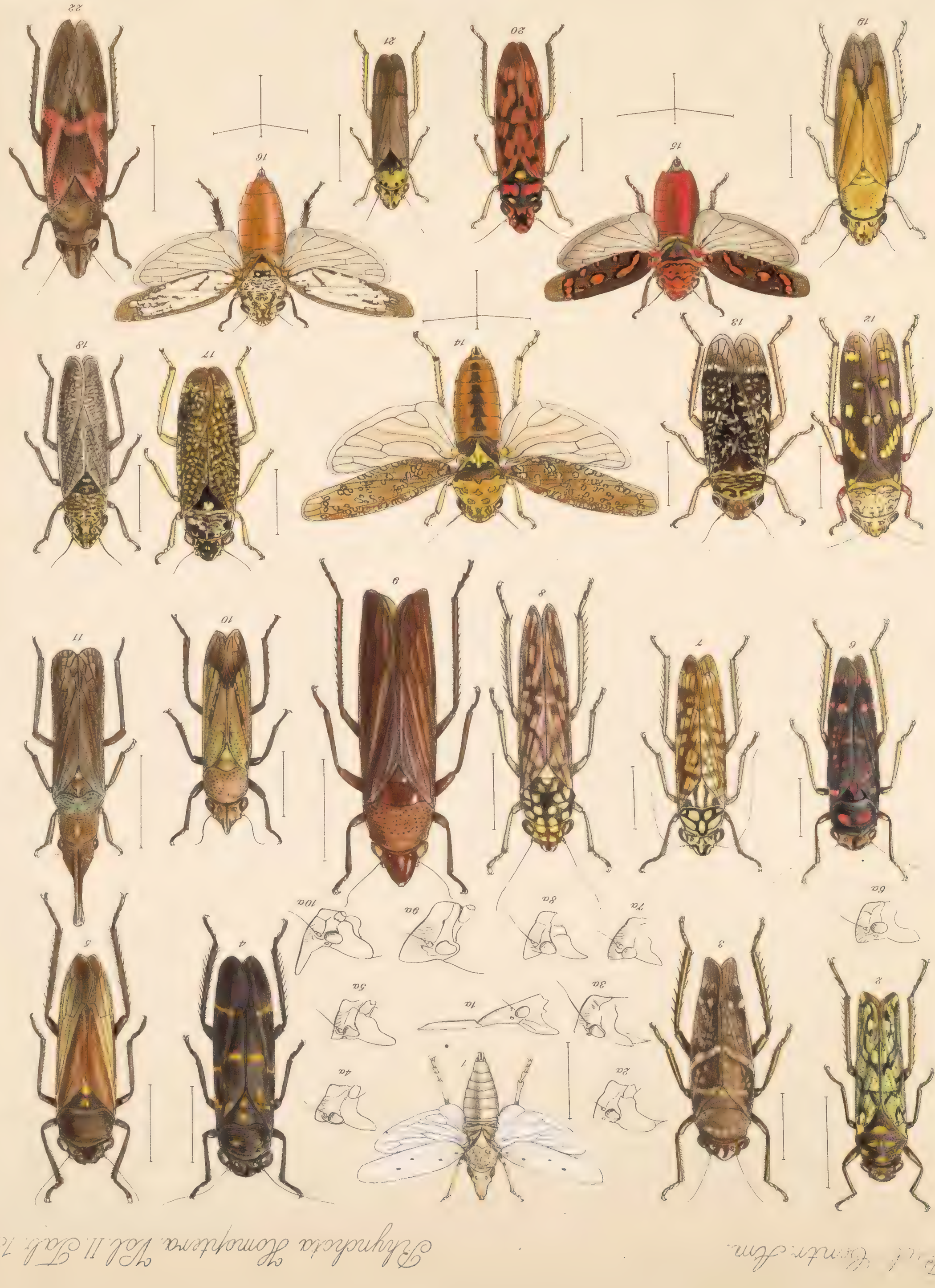
1 NEMUS VARIUS. 11 MICROSARGANE VITTATA. 21 CLASTOPTERA FLAVIVITTA.
2 " " *Var.* 12 EPICRANION CHAMPIONI. 22 " DIMIDIATA.
3 CEPHISUS SICCIFOLIUS. 13,13a,b. EICISSUS DECIPIENS. 23 " OBTUSA.
4 4a. LEPYRONIA SUBFASCIATA. 14 CLASTOPTERA FUNESTA. 24 " " *Var.*
5 PHILÆNUS FUSCO-VARIUS. 15 " " *Var.* 25 " LÆNATA
6 " " *Var.* 16 " GLOBOSA. 26 " STALI.
7 APHROPHORA LÆVIOR. 17 " COMPTA. 27 " CHIRICOENSIS.
8 " GRISEA. 18 " MINIMA. 28 " FLAVIP[illegible]
9 PARAPHROPHORA SIMPLEX. 19 " ANTICA. 29 " JUNCE[illegible]
10 XENAPHROPHORA MONTANA. 20 " SEMIVITREA. 30 " [illegible]



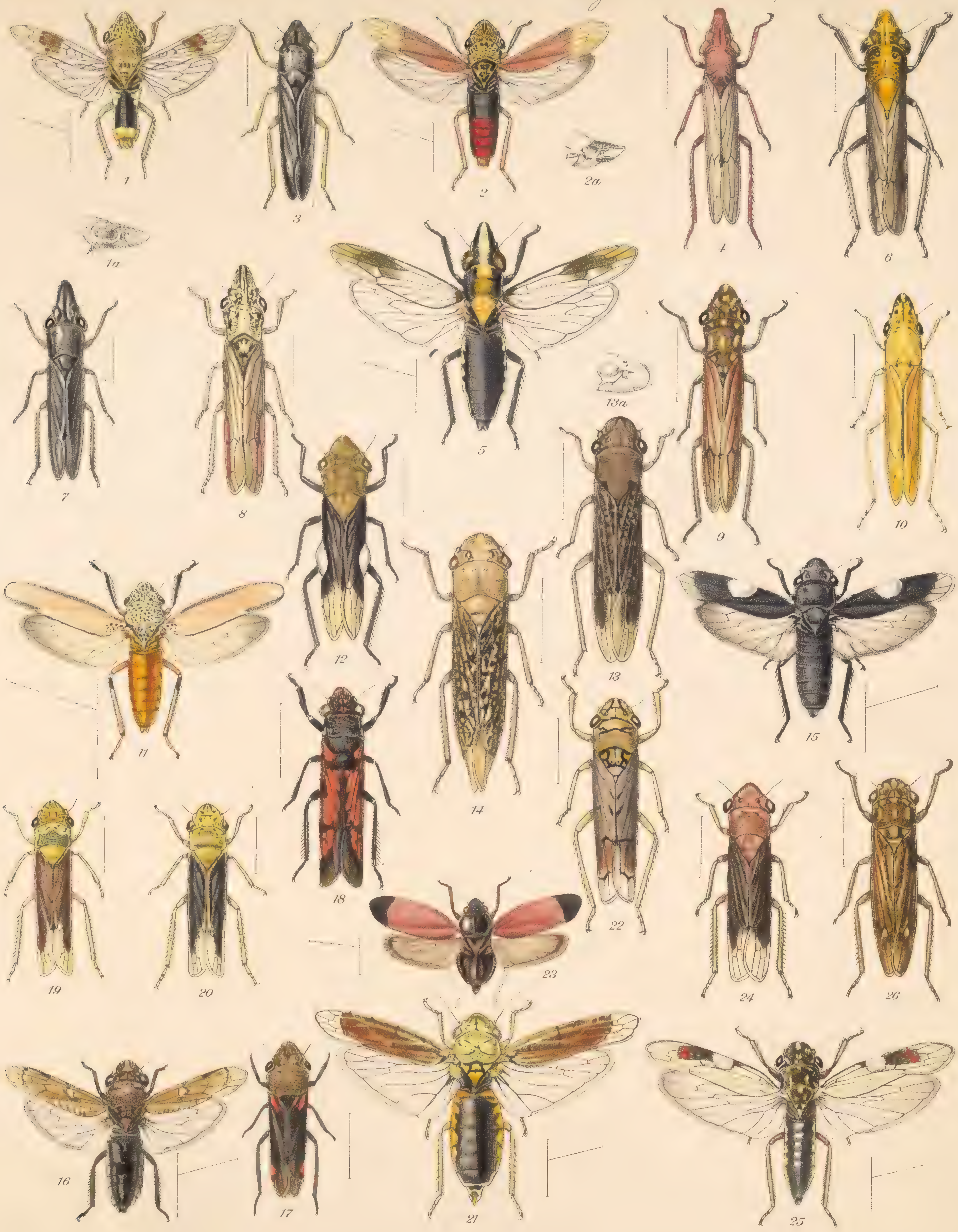
Biol. Centr.-Am. Orthoptera Pl. II Gall 12

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1a DIESTOSTEMMA RUGICOLLE.
2,2a AMBLYDISCA SALVINI.
3,3a " RUBRIVENTRIS.
4,4a " BUGABENSIS.
5,5a " POSTFUMATA.
6,6a " FLUCTUOSA.
7,7a " TAPES.
8, 8a AMBLYDISCA AULEATA.
9, 9a " GIGAS.
10,10a CATORTHORRHINUS RESIMUS.
11 BASCARRHINUS PLATYPOIDES (FEMALE).
12 AULACIZES NUTANS.
13 " PIPERATA.
14 " FIGURATA.
15 " INVIDENDA.
16 AULACIZES ALBIDIPENNIS.
17 " SPARSA.
18 " POLLINOSA.
19 " AURANTIACA.
20 " THUNBERGI.
21 " PANAMENSIS.
22 " INSIGNIOR.



Phil. Centr. Am. Blaberidæ Dictyoptera. Vol. II Tab. 13



1, 1a PHERA VITRIPENNIS.
2, 2a " INSOLITA.
3 " ATRATA.
4 " LUCIOLA.
5 " CENTROLINEATA.
6 " OBTUSIFRONS.
7 " ATERRIMA.
8 " LACERTA.
9 " AUREA.
10 PHERODES FLAMMEICOLOR.
11 CYRTODISCA MAJOR.
12 ONCOMETOPIA INTERJECTA.
13, 13a ♂ " DISPAR.
14 ♀ " ".
15 " TARTAREA.
16 " FUSCIPENNIS.
17 " QUADRINOTATA.
18 ONCOMETOPIA MINIATIPENNIS. (Sim
19 " UNDATA, var.
20 " " , var.
21 " MUNDA.
22 " ALPHA. (Similitota
23 TOMASPIS CONSPICUA.
24 ONCOMETOPIA RUBESCENS.
25 " SPECULIFERA.
26 " ANCEPS.

Edwin Wilson Cambridge.

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT

Inches 1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Centimetres

KODAK Color Control Patches © The Tiffen Company, 2000

Kodak
LICENSED PRODUCT

Blue Cyan Green Yellow Red Magenta White 3/Color Black

Edwin Wilson, Cambridge

1	TETTIGONIA	RUPICEPS, *var.* TRILINEATA	11	TETTIGONIA	5-SIGNATA	20	TETTIGONIA	GERMANA
2	"	PISOLUBILIS	12		MOSAICA	21	"	[illegible]
3	"	*var.* FASCIATA	13	"	MELANOCHOLICA	22	"	MONTICOLA
4	"	CYNTHIA	14	"	LINEOSA	23	"	MEDIOLINEATA
5	"	CHRIOPENSIS	15	"	COLLICOLES	24	"	MORIO
6	"	INSIGNIS	16	"	CONSPERSA	25	"	*var.*
7	"	[illegible]	17	"	[illegible]	26	"	[illegible]
8	"	PERPALLIDA	18	"	LINEATA	27	"	[illegible]
9	"	[illegible]	19	"	PUNCTULATA	28	"	SIMILIS
10	"	[illegible]				29	"	*var.* [illegible]

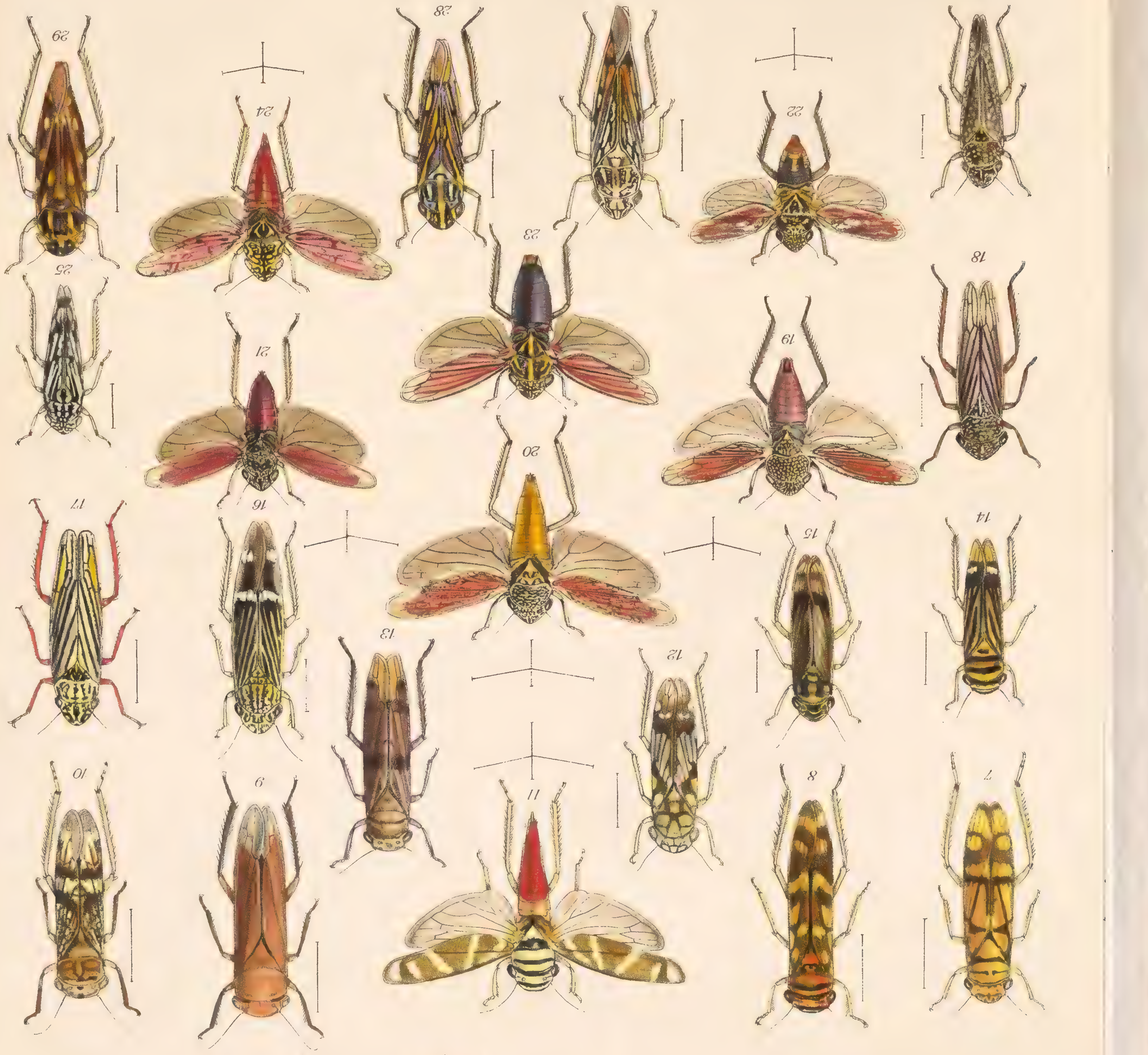
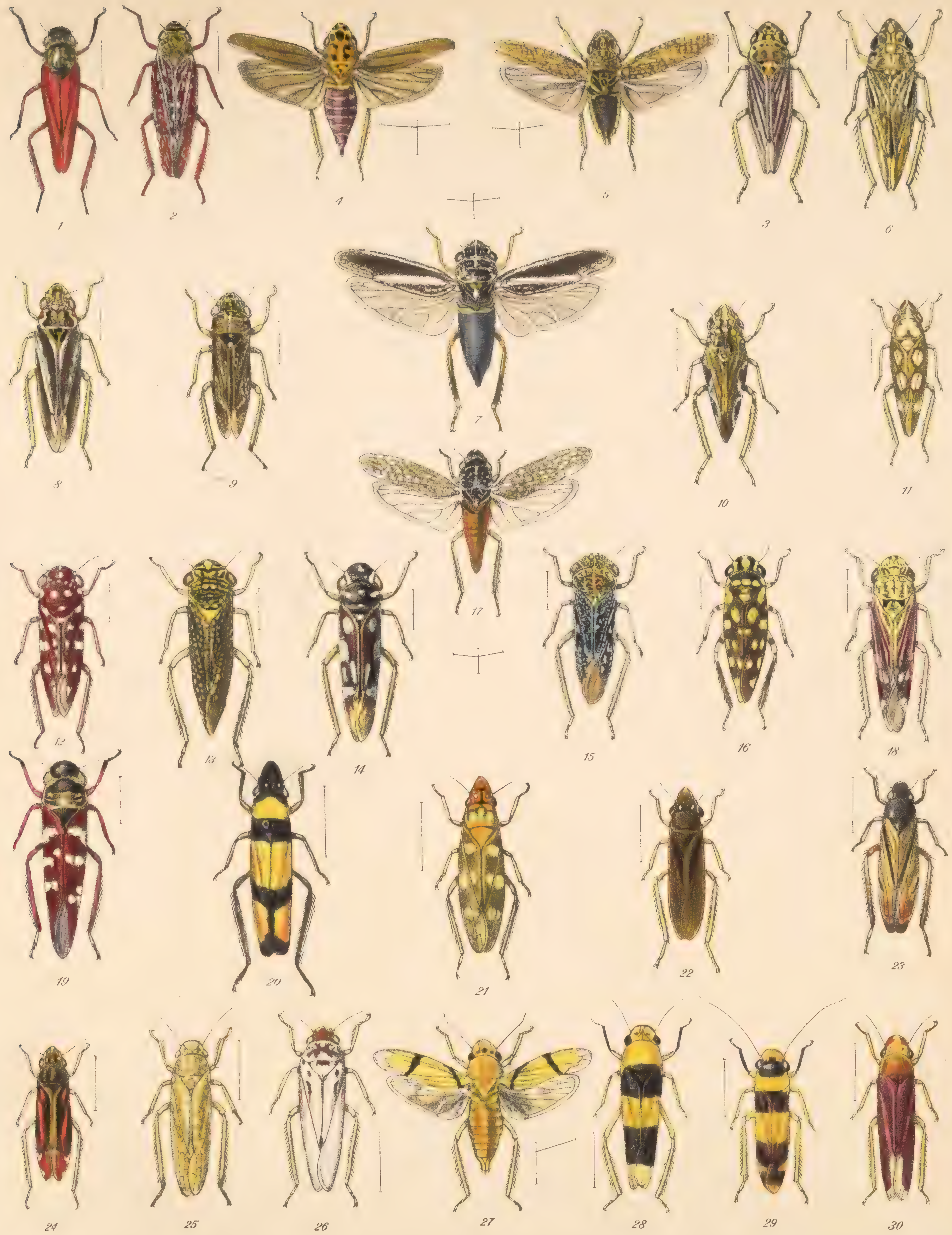


Plate Centr. Am. *Rhynchota Hemiptera* *Vol II Pl. 15*



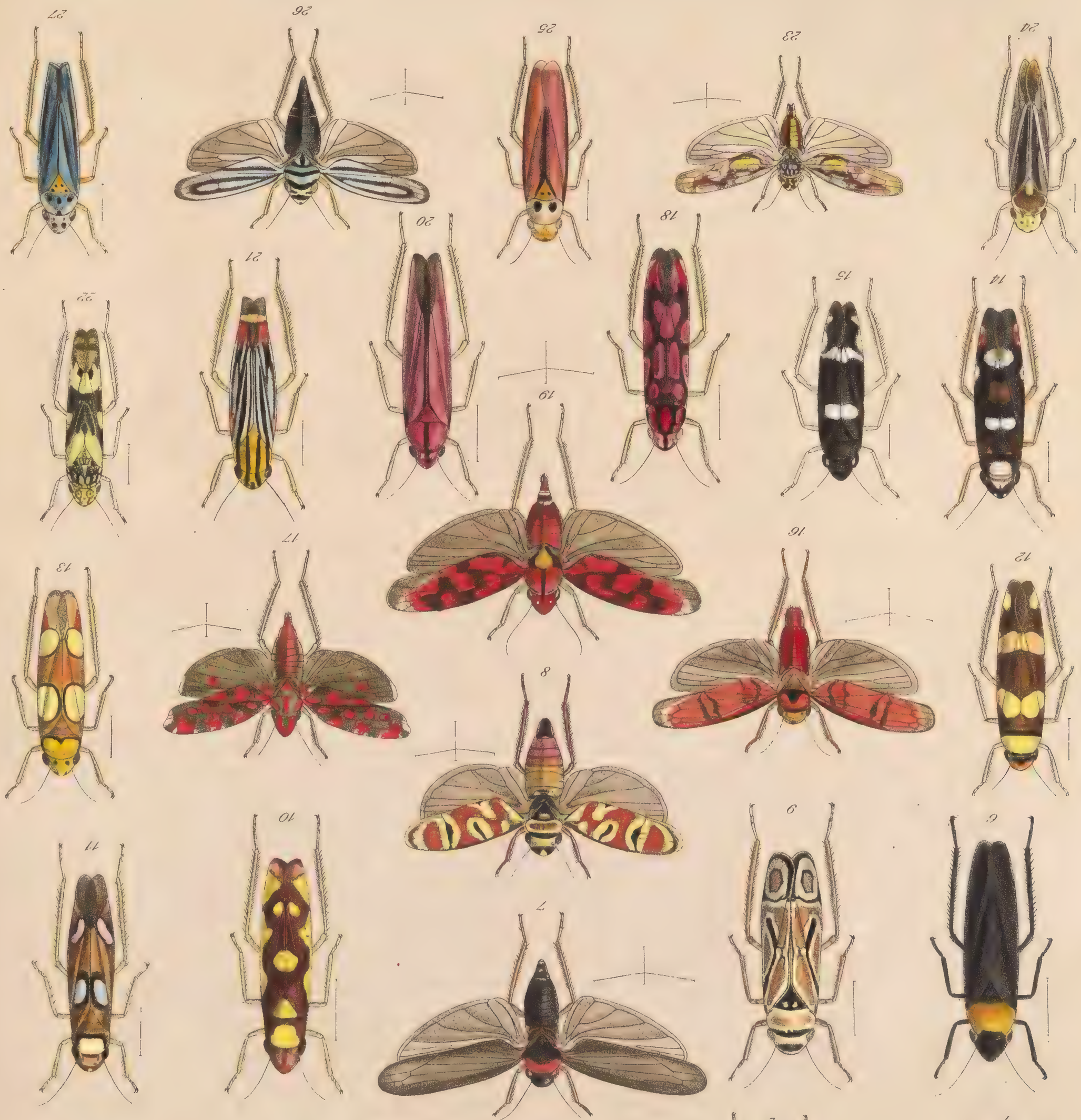
1	TETTIGONIA	[illegible]MICATA.	11	TETTIGONIA	CERVINA
2	"	GUERREROENSIS.	12	"	ALBIDONCTATA.
3	"	APPROPINQUANS.	13	"	TESTUDINARIA.
4	"	TRANSFUGA.	14	"	REDUNDANS
5	"	IGNOBILIS	15	"	VELUTINA.
6	"	SUPERFLUA	16	"	CONGRUENS.
7	"	LUGUBRIS	17	"	AMULÆ
8	"	SEPARANDA.	18	"	SIRENA
9	"	[illegible]	19	"	ALBOMACULATA.
10	"	[illegible]	20	"	[illegible]

21	TETTIGONIA	11-MACULATA
22	Pamplona "	FERALIS
23	"	FRACTILINEA.
24	"	NOTANDA
25	"	ERUMPENS.
26	"	SPECTRALIS.
27	"	BILINEATA.
28	"	TÆNIATA.
29	"	DISTINGUENDA
30	"	OSTRINA.

Edwin Wilson Cambridge

Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

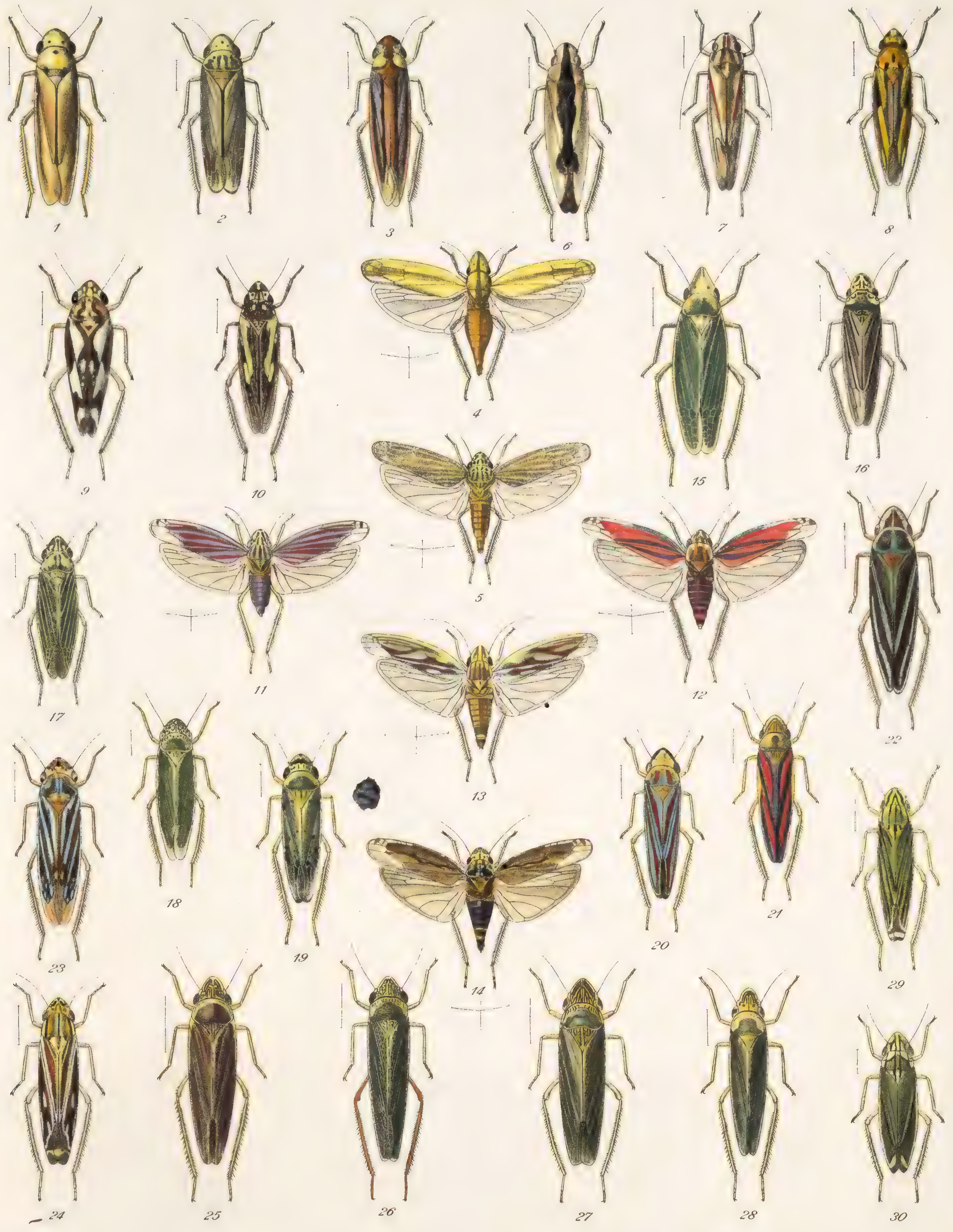
1	TETTIGONIA	RUFOFASCIATA.	10	TETTIGONIA	FLAVOGUTTATA.	19	TETTIGONIA	COCCINEA.
2	〃	DETRACTA.	11	〃	AREOLATA.	20	〃	BILIMEKI.
3	〃	SCUTELLATA.	12	〃	COLLATA.	21	〃	VULNERATA.
4	〃	TRIVIRGATA.	13	〃	LAUDATA.	22	〃	RECTA.
5	〃	PURPURASCENS.	14	〃	SEXGUTTATA.	23	〃	AEQUA.
6	〃	COSTARICENSIS.	15	〃	SOCIATA.	24	〃	ALBICEPS.
7	〃	RUBRICOLLIS.	16	〃	JUCUNDA.	25	〃	VENUSTA.
8	〃	PULCHELLA.	17	〃	SANGUINOLENTA.	26	〃	MULTICOLOR.
9	〃	〃 PROXIMA.	18	〃	GUTTATA.	27	〃	ATROPUNCTATA.



Edwin Wilson. Cambridge.

Biol. Centr.-Am.

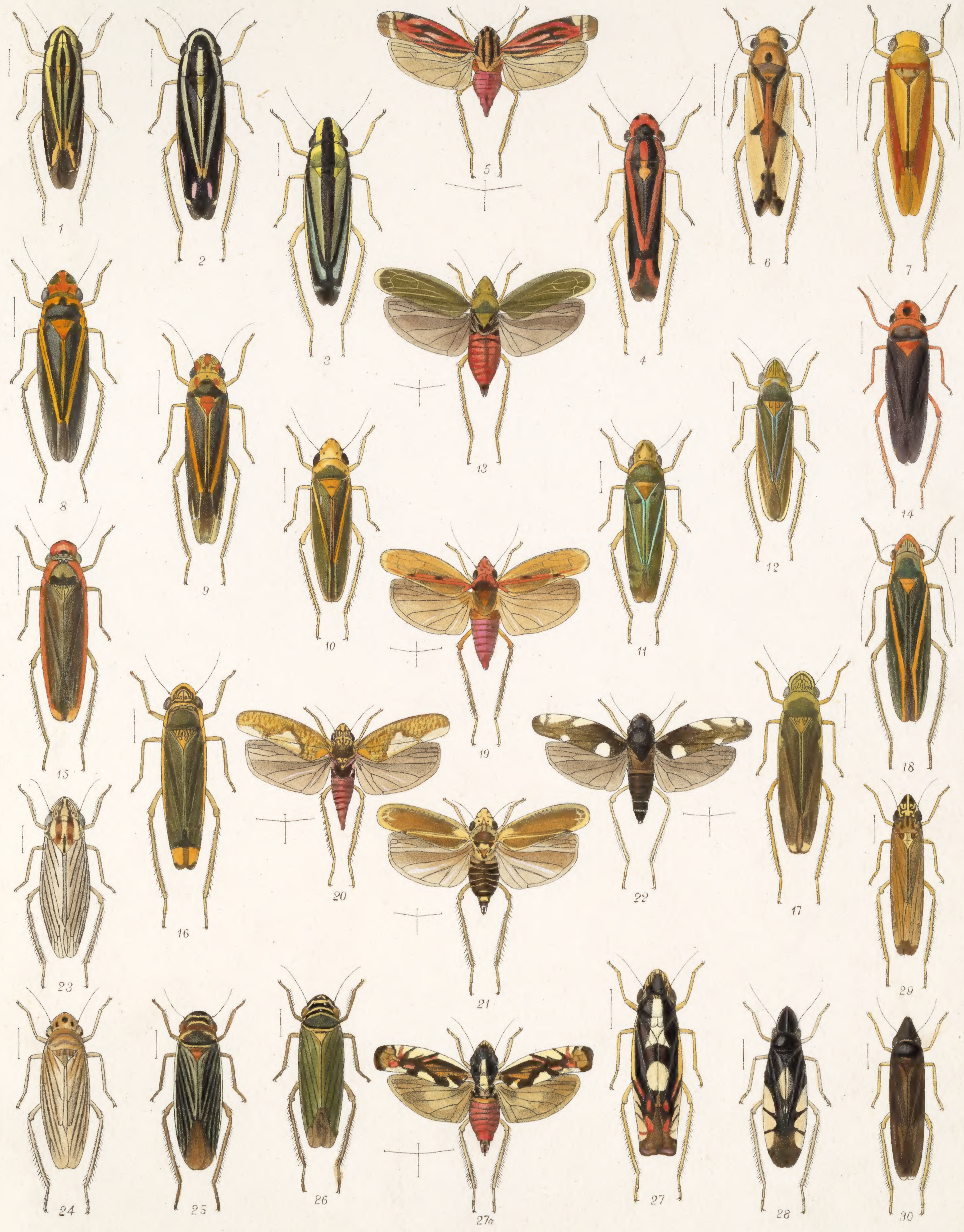
Rhynchota Heteroptera. Vol. II. Tab. 17.



No.			No.			No.		
1	TETTIGONIA	LUTEA.	11	TETTIGONIA	COMPTA = occatoria	21	TETTIGONIA	REDACTA.
2	"	RESERVATA.	12	"	TUNICATA.	22.	"	IDONEA.
3	"	LUCASI.	13	"	SORORIA.	23	"	CÆRULEOVITTATA, *v.* DELINEATA.
4	"	COMPLETA.	14	"	CIVILIS.	24	"	COMPOSITA.
5	"	DELICATA.	15	"	MOLLIPES.	25	"	URBANA
6	Neocoelidia –	FUSCODORSATA.	16	"	NOTATICEPS.	26	"	OBTUSIOR.
7	Neocoelidia	VERECUNDA.	17	Carneocephala	DIDUCTA.	27	Mareja "	LIMBATICOLLIS.
8	"	INDUTA.	18	"	PROLIXA.	28	"	ANCEPS.
9	"	CLEPSYDRA.	19	"	VIRGATICEPS.	29	"	OCCATORIA.
10	"	FLAVIVITTA.	20	"	QUADRIVITTATA.	30	"	SEXLINEATA.

→ NEOCOELIINAE

Edwin Wilson Cambridge.

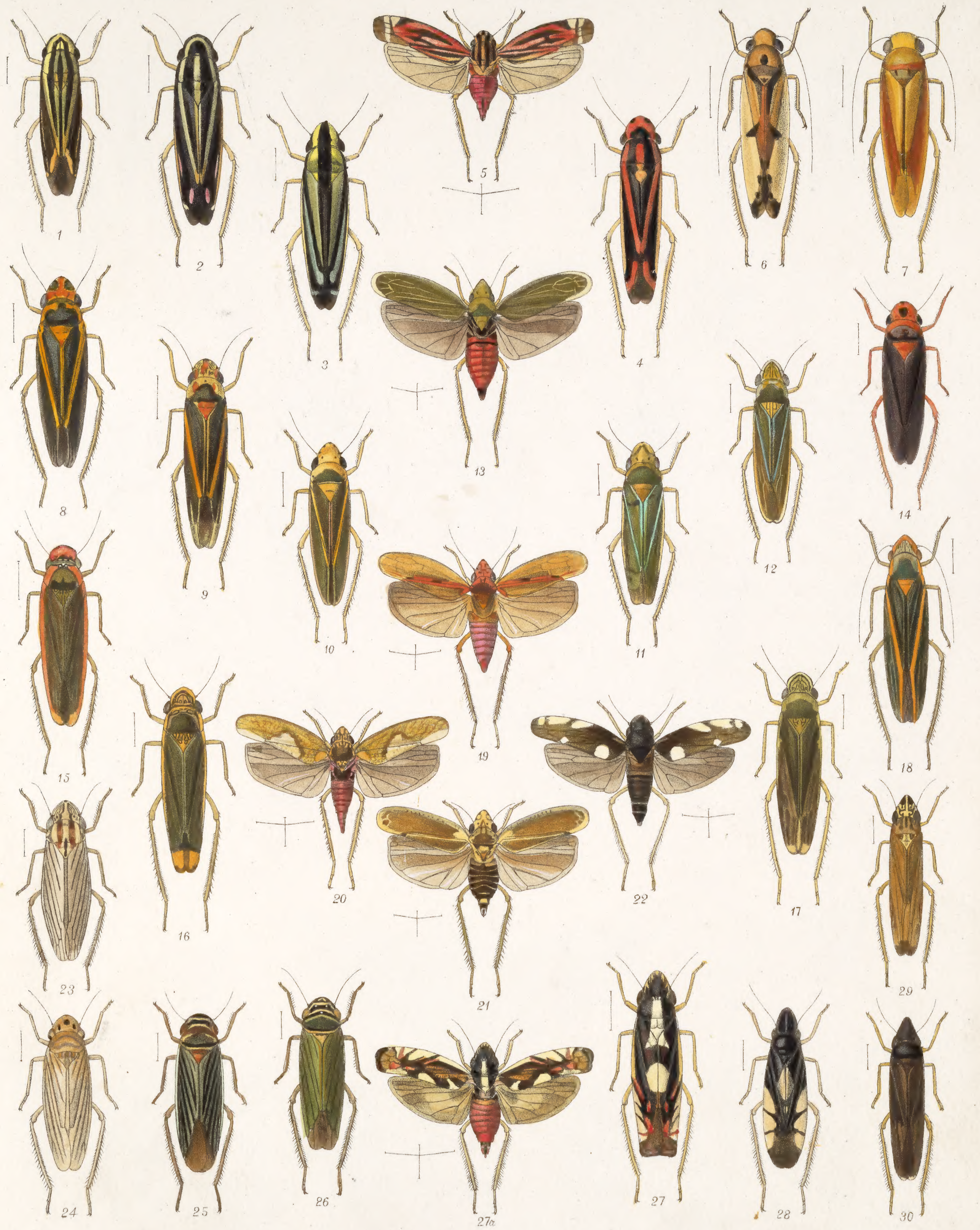


1 TETTIGONIA CARISSIMA.
2 " ANITA.
3 " LATIVITTATA.
4 " SALUTARIS.
5 " INFULATA.
6 Salvina — DORSISIGNATA }
7 Chinaia — RUBESCENS. } NEOCOELIDIINAE
8 " AUROLINEATA.
9 " LEMNISCATA.
10 " LUCULENTA.

11 TETTIGONIA RUFIMARGO.
12 " " , v. PROPIOR.
13 " PECTORALIS.
14 " MINIATICEPS.
15 " SPECTANDA.
16 " RUFOAPICATA.
17 " ORBATA.
18 " PILEATA.
19 Allogonia " ~~COMPTA~~. concinnula
20 " TERES.

21 TETTIGONIA ROBUSTULA.
22 " SATELLES.
23 Plesiommata " MOLLICULA.
24 " " " MOLLICELLA.
25 " FUSCOLINEELLA = Kolla fasciata
26 " PSITTACELLA.
27, 27a " VARIEGATA.
28 Synogonia " NASUTA. (NIRVANINAE)
29 Amahuaka " ANGUSTULA. }
30 " " , v. IMMACULATA } TYPHLOCYBINAE

E. Wilson, Lith. Cambridge.



1 TETTIGONIA CARISSIMA.
2 Sibovia ,, ANITA.
3 ,, LATIVITTATA.
4 ,, SALUTARIS. - 281
5 ,, INFULATA.
6 Salvina ,, DORSISIGNATA.
7 Chinaia RUBESCENS.
8 ,, AUROLINEATA.
9 ,, LEMNISCATA.
10 ,, LUCULENTA.

11 TETTIGONIA RUFIMARGO.
12 ,, ,, ,, v. PROPIOR.
13 ,, PECTORALIS.
14 ,, MINIATICEPS.
15 ,, SPECTANDA.
16 ,, RUFOAPICATA.
17 ,, ORBATA.
18 ,, PILEATA.
19 ,, COMPTA.
20 ,, TERES.

21 TETTIGONIA ROBUSTULA.
22 ,, SATELLES.
23 Plesiommata {MOLLICULA.
24 ,, {MOLLICELLA.
25 ,, FUSCOLINEELLA. = Kolla fasciata
26 ,, PSITTACELLA.
27, 27a ,, VARIEGATA.
28 ,, NASUTA.
29 Amahuaka ,, ANGUSTULA.
30 ,, ,, v. IMMACULATA.

E. Wilson, Lith. Cambridge.

Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1a,b ♀ EPICLINES GODMANI.
2,2a,b ♀ GYPONA GERMARI.
3 ♂ " "
4,4a,b ♀ " BIMACULATA.
5,5a,b ♀ " DELICATA.
6,6a,b ♀ " CHIRIQUENSIS.
7,7a,b ♀ " PALLIDOVIRENS.

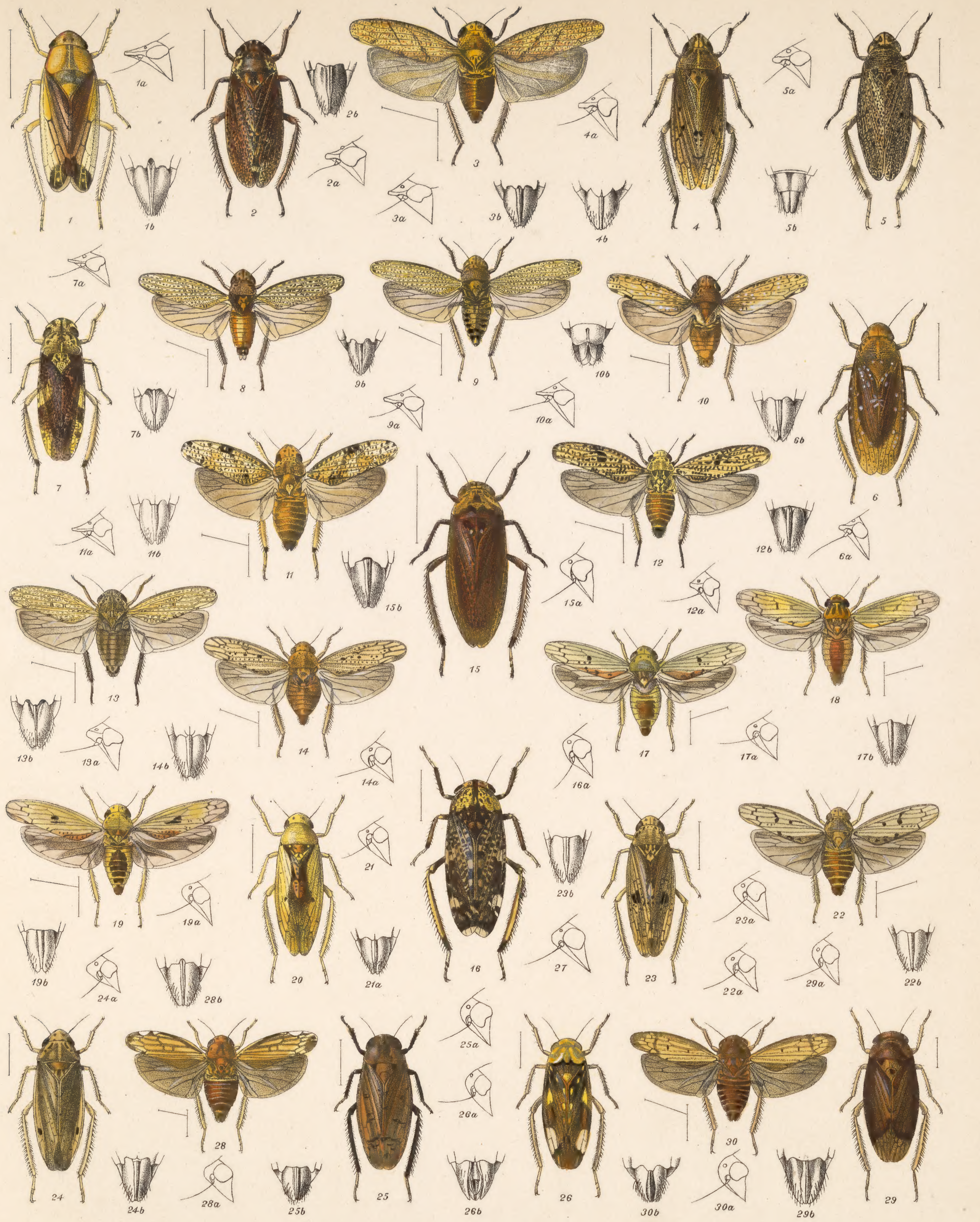
8,8 a ♀ GYPONA DUBIA.
9,9 a ♀ " EXCELSA.
10 ♂ " LACTEIPENNIS.
11 ♀ " "
12,12 a,b ♀ " SIGNORETI.
13 ♀ " OBSCURIOR.
14,14 a,b ♂ " PUNICEIVENTRIS.

15 ♂ GYPONA COMPTA.
16,16 a ♀ " VILIOR.
17,17 a,b ♀ " VERTICALIS.
18,18 a,b " MARGINIFRONS.
19,19 a,b ♂ " VULNERATA.
20,20 a,b ♀ " POSTICA.
21,21 a,b ♂ " POSTICA.

Edwin Wilson, Cambridge.

Biol. Centr.-Amer.

Rhynchota Heteroptera. Vol. II. Tab. 20.



1, 1 a, b ♀ GYPONA GLAUCA.
2, 2 a, b ♀ " NOTANDA.
3, 3 a, b ♀ " SUBTACTA.
4, 4 a, b ♀ " SPRETA.
5, 5 a, b ♂ " ATITLANA.
6, 6 a, b ♀ " ALBORORATA.
7, 7 a, b ♀ " JANSONI.
8 ♂, 9, 9 a b ♀ " MARMORATA.
10, 10 a, b ♂ " TEAPENSIS.

11, 11 a, b ♀ GYPONA ADUSTA.
12, 12 a, b ♀ " SCUTELLATA.
13, 13 a, b ♀ " ABJECTA.
14, 14 a, b ♀ " PROSCRIPTA.
15, 15 a, b ♀ " HEBES.
16, 16 a, ♂ " DECORATA.
17, 17 a, b ♀ " VINULA.
18 ♀ " " , *var.*
19, 19 a, b ♀ " PROPIOR.
20 ♂, 21, 21 a ♀ " TERGATA.

22, 22 a, b ♀ GYPONA HIEROGLYPHICA.
23, 23 a, b ♀ " BISIGNATA.
24, 24 a, b ♀ " RESERVANDA.
25, 25 a, b ♀ " PRÆTERITA.
26, 26 a, b ♀ " EXORNATA.
27 ♂ " WALLENGRENI.
28, 28 a, b ♀ " NANA.
29, 29 a, b ♀ " CELATA.
30, 30 a, b ♀ " RESIMA.

E. Wilson, Cambridge.